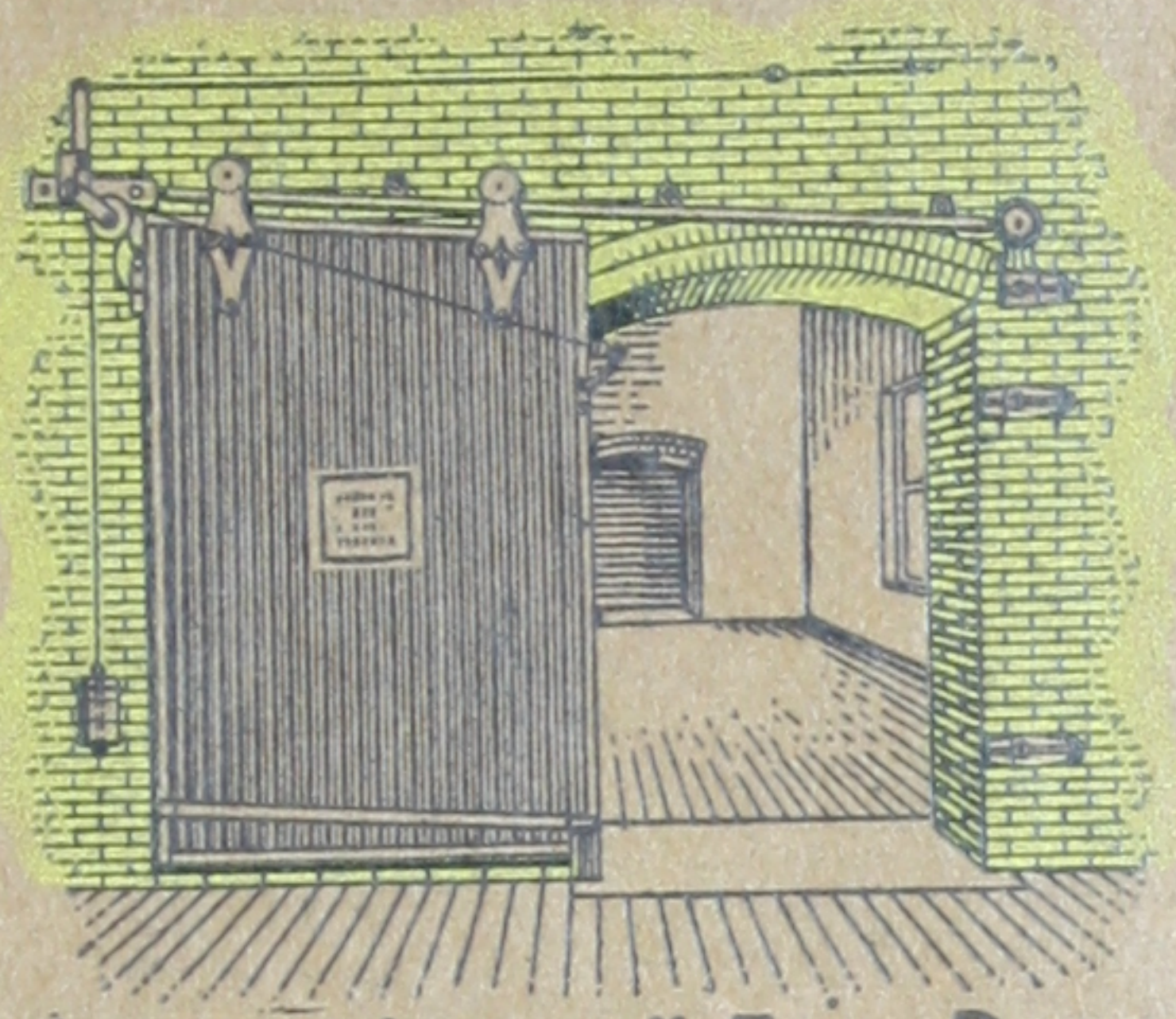


5-30-1

AUG 25 1919

# EVANS "ALMETL" FIRE DOORS & SHUTTERS AND THE FAMOUS "STAR" VENTILATORS



EVANS "ALMETL" FIRE DOOR

BRACKET LUG  
INSTALLER  
L. H. J. JONES

POWELL EVANS, PRESIDENT.

## MERCHANT & EVANS Co

NEW YORK      PHILADELPHIA      WHEELING  
BALTIMORE  
ATLANTA  
CLEVELAND      ST. LOUIS  
KANSAS CITY













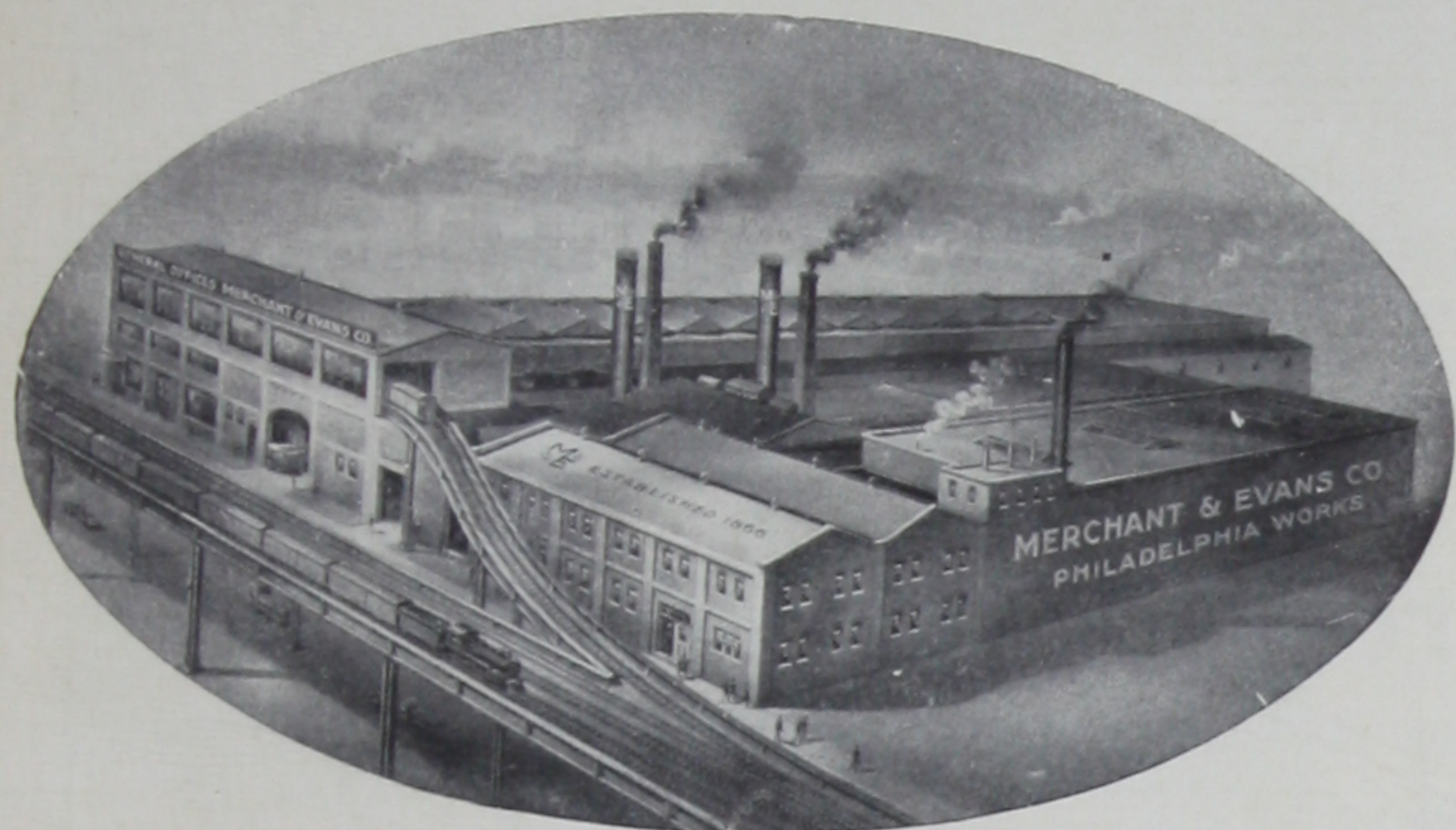






# EVANS "ALMETL" FIRE DOORS AND SHUTTERS

(PAT. PENDING)



OUR PHILADELPHIA PLANT

Form an impassable fire barrier.  
Constructed of steel and asbestos.  
Rigid, non-warping and indestructible.  
No wood to rot; no tin to rust.

## THE WORLD'S STANDARD

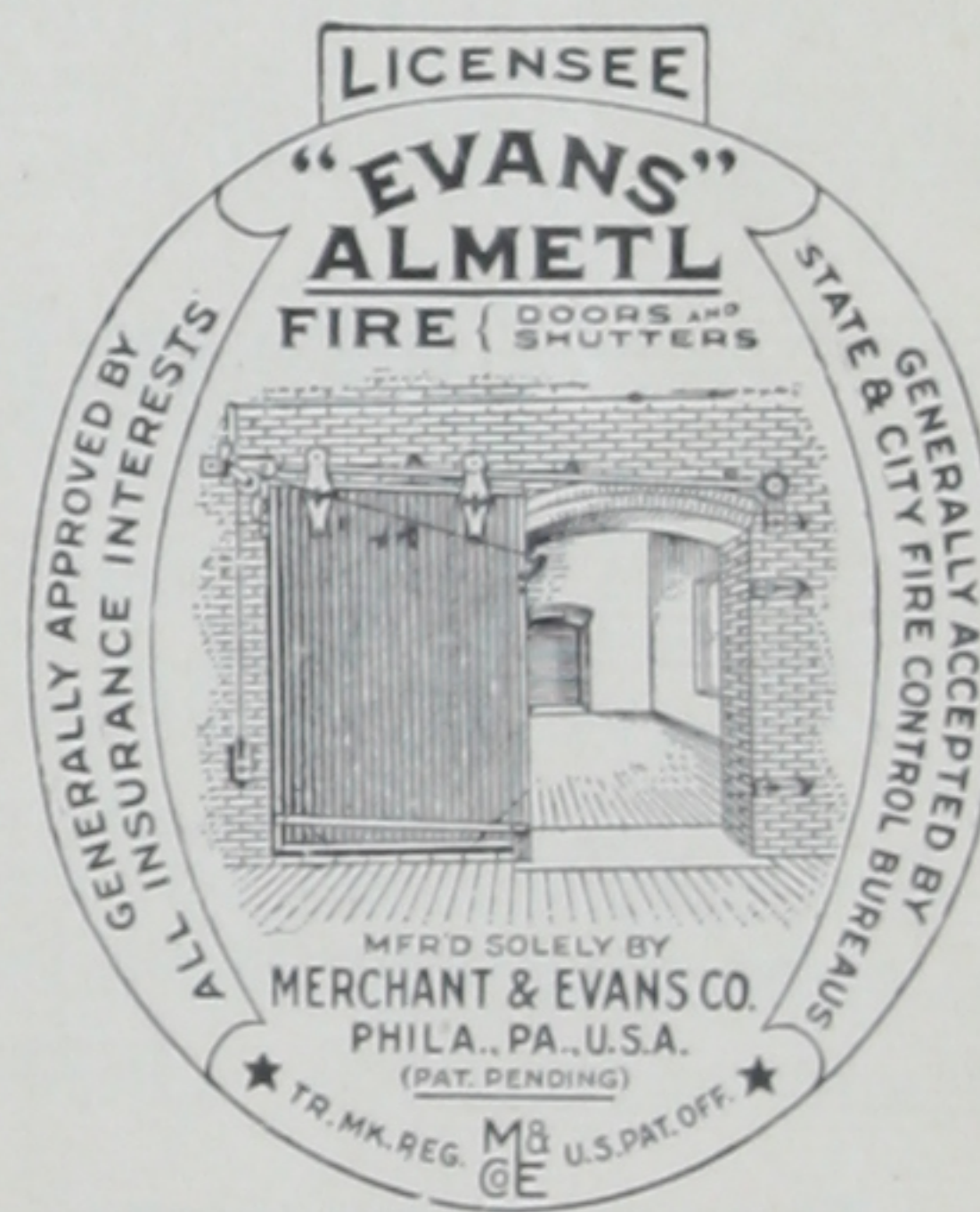
Fully approved by Underwriters' Laboratories, Chicago, and Factory Mutual Laboratories, Boston, State and Municipal Officials everywhere, and approved and used by the U. S. Government in many important buildings.

## SERVICE AND FACILITIES

We have a large number of thoroughly experienced contracting and erecting Licensees established in all parts of the country. Herewith is an illustration of the cut used by our Licensees on their stationery. It is your assurance that they have been selected by us as fully competent to care for the erection of our Evans "Almetl" Fire Doors, and Evans "Almetl" Fire Shutters, to accord with all Underwriters' requirements.

Look for this cut on their Stationery

If you are not in touch with any of our Licensees, please write to our nearest office and you will be promptly furnished with full and complete information, and arrangements made for estimating on your requirements.



# MERCHANT & EVANS Co.

NEW YORK

PHILADELPHIA

WHEELING

BALTIMORE

CHICAGO

ATLANTA

ST. LOUIS

CLEVELAND

KANSAS CITY

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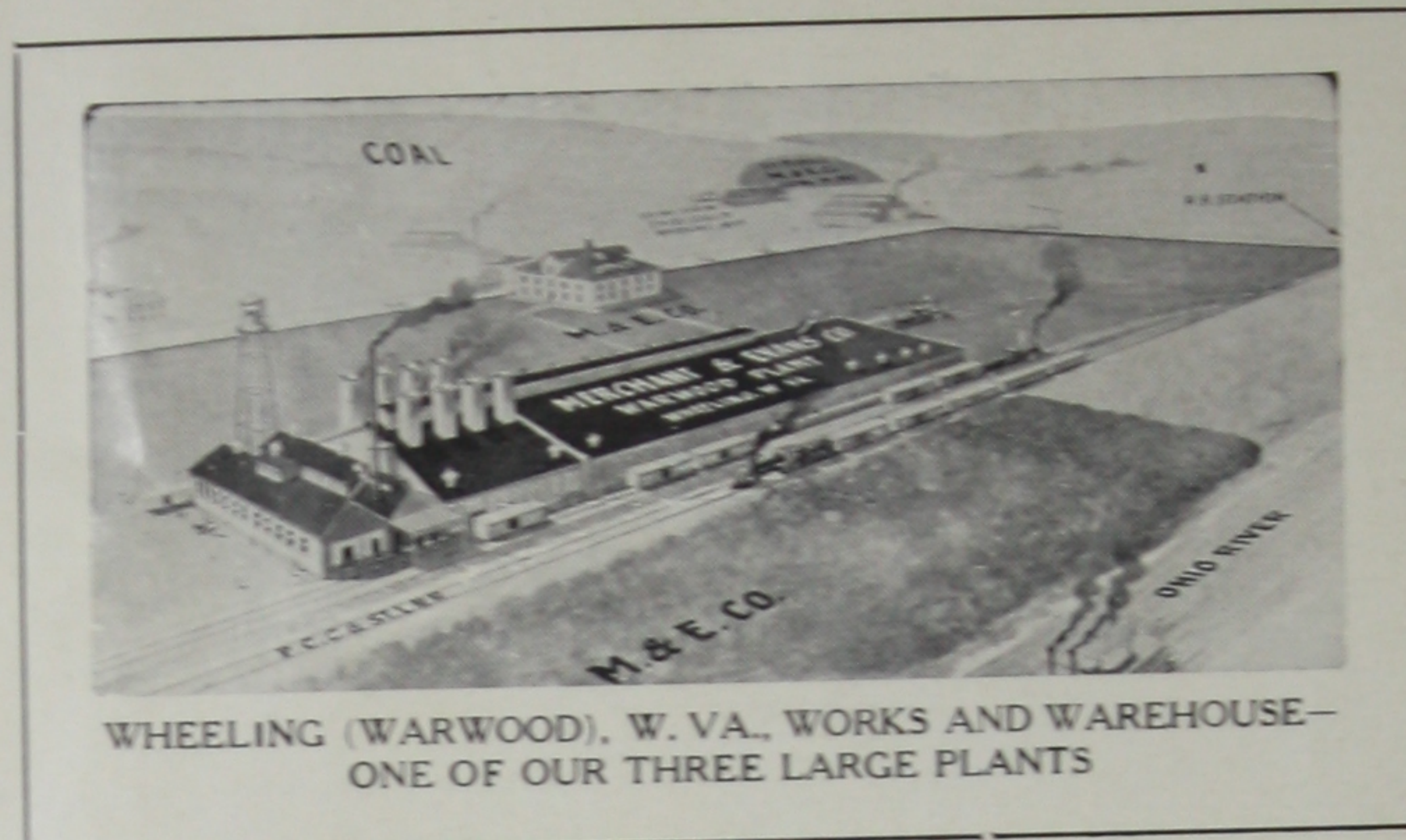
BY

MERCHANT & EVANS CO., PHILA.



EVERYTHING IN METALS





## The Importance of Fire Doors and Shutters

is indicated by the fact that one-third of all fire insurance charges in cities are for exposure hazards.

Yet despite this warning, despite the evidence of every big fire that the risk is reduced to a minimum by the installation of proper doors and shutters, there was no well made, well designed metal covering for unprotected openings that met the Fire Hazard adequately, until we originated the Evans "Almetl" Fire Doors and Shutters.

Approved by Underwriters' Laboratories and by officials everywhere because of their proven superiority, Evans "Almetl" Doors and Shutters have other great advantages. They are capable of economic and systematic shop production, they are adaptable to all conditions in plants of every character, and they are lowest in maintenance cost.

Through our Branches and numerous experienced contracting and erecting Licensees, distributed throughout the United States, we are able to give a service to architects, builders, and owners of properties, that solves the problem of the unprotected or improperly protected opening.

## Most Fires are Preventable and Controllable

One of the principal remedies is to install fire doors to protect exposed openings in Division Walls or Fire Walls, of either old or new buildings.

An approved installation of Evans "Almetl" Fire Doors will reduce the annual insurance rate on property.

The Regulations of the National Board of Fire Underwriters, for the protection of openings in walls and partitions against fire, specifically state that:

The great importance of Fire Walls as a safeguard to life and in preventing the spread of fire, and the fact that they are liable to be severely exposed to fire for considerable periods, makes it essential that all openings in such walls be protected by the most efficient methods."

The Evans "Almetl" Fire Door is of rigid, all-steel, indestructible construction. No tin to rust, no wood to rot, no thin covering to bruise; it has been given the very highest Standard Class A Grade Approval issued by the Underwriters' Laboratories, Inc., of Chicago, and is fully approved by the Factory Mutual (Boston) Laboratories. It has been proved by experience and actual tests to be the best Fire Door on the market.

Thousands of wood-core tin-clad fire doors have been replaced because of the effect of dry rot. Why pay double? The Evans "Almetl" Fire Door will last indefinitely and requires no repairs or expense to maintain.

You can avoid unnecessary charges for fire hazard by installing the Evans "Almetl" Fire Doors or Shutters.

MERCHANT & EVANS COMPANY,  
POWELL EVANS, PRESIDENT.





# To Architects, Contractors, Property Owners and State and City Police and Safety Departments



Evans "Almetl" Fire Doors, after a series of rigid tests, were placed in the very highest Standard Class A grade (both Fire and Accident), by the Underwriters' Laboratories, Chicago, Ill., and have received the very best approval from the Factory Mutual Laboratories, Boston. We strongly recommend that you specify these doors wherever maximum reduction in insurance rates is desired, lowest maintenance costs and the highest degree of protection to both life and property.

Those foremost in fire protection and prevention affairs throughout the country have recognized the superiority of our doors, as we have received over two hundred approvals from National, State and Municipal officials. A duplicate copy of one of these approvals is shown in cut.

Unlike other types of doors that are made by hundreds of concerns in a multitude of places and under all sorts of conditions, the Evans "Almetl" Doors are built in one central factory, and constantly supervised by the Underwriters' Laboratories Inspectors. Modern high-powered machinery and the most skillful labor obtainable is employed to produce absolute uniformity of construction.

It is claimed that standard tin-clad fire doors must contain at least 10% of moisture in their wood core to be unaffected by dry rot, but it is to be further noted that when the wood core contains more than 10% of moisture the intense heat from a fire will generate gases that can exert sufficient pressure on the seams or joints of the tin to burst them apart, whereas the "Almetl" Doors are so well and strongly made that they should last indefinitely and without any repairs.

Our doors will eventually pay for themselves in the insurance reduction allowed for their installation, and the practical absence of any maintenance charges. They are unquestionably the latest and very best building opening coverings on the market, and afford a maximum degree of protection against both fire and accident. They also cost less to install than the standard tin-clad doors.

The Evans "Almetl" Fire Shutters have received the highest approvals from the Underwriters' Laboratories, Chicago, and from the Factory Mutual Laboratories, Boston, and wherever Fire Shutters are needed you can unhesitatingly specify them as suitable for the most exacting conditions.

Please note carefully that approval by the Underwriters' Laboratories covers Stock Insurance only, whereas we also have Mutual Insurance approval through the Factory Mutual Laboratories of Boston.

In addition to our approvals from the Chicago and Boston Laboratories, we have over two hundred approvals from prominent officials directly interested in fire protection and prevention affairs, thus constituting a far greater number and a better class of approvals than extended to the manufacturers of any other fire doors on the market.

## SPECIFICATIONS

We suggest that you adopt the following specifications:

"Furnish and install all Fire Doors and Fire Shutters where shown or indicated on plans.

Doors or Shutters to be the Evans "Almetl" type, manufactured by Merchant & Evans Company, Phila., Pa., to be automatic self closing in case of fire. Door to be made of two thicknesses of No. 24 gauge  $2\frac{1}{2}$ " corrugated galvanized steel, interlined with asbestos roll board in a continuous rigid frame of  $2\frac{1}{2}$ " x  $\frac{3}{16}$ " bar steel, (Frames of Doors for openings over 50 square feet in area to be made of  $2\frac{1}{2}$ " x  $\frac{1}{4}$ " bar steel) bound in No. 22 gauge galvanized steel cover, tightly riveted to frame. Proper provision is to be made for expansion and contraction without distorting the frame, and where necessary on account of size reinforcing rods securely fastened are to be provided and to extend the entire width of Door.

All Doors to be equipped with approved Hardware, each Door shall bear the label of the Underwriters' Laboratories and also that of the manufacturer. Factory Mutual Laboratories' symbol of approval shall appear on the Doors, when required for buildings where insurance risks are carried by the Factory Mutual Companies. All automatic self closing devices to be in strict accordance with the requirements of the Fire Underwriters having jurisdiction.

DD 29-13 4948 TEL

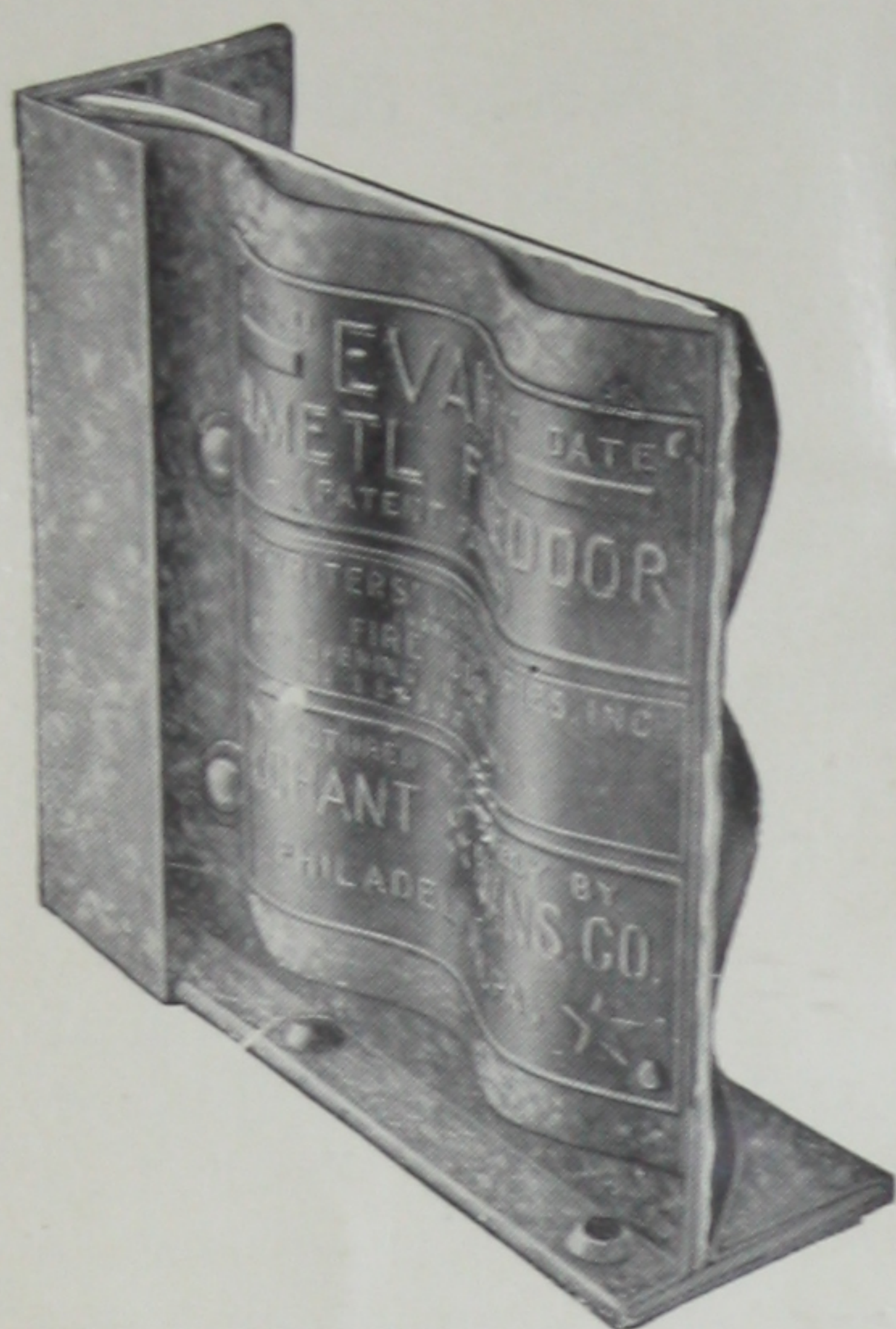




# GENERAL DESCRIPTION

## EVANS "ALMETL" FIRE DOORS

(PAT. PENDING)



Note the construction as shown by adjoining illustration; a double panel of heavy corrugated galvanized steel, lined with the best grade of sheet asbestos and bound in a rigid, continuous frame of  $3/16'' \times 2\frac{1}{2}''$  bar steel.

This frame is reinforced on all edges by an extra heavy binder of galvanized steel, thus forming a box for the panel and preventing the damage that always occurs to fire doors of other types.

There is ample provision for expansion and contraction so that any distortion or warping of the door is impossible. The construction provides a series of regular air spaces, properly insulated and covering the entire area of the door. This reduces radiation of heat to a minimum.

The cross-laid corrugated sheets, rigidly attached to the reinforced frame, makes the Evans "Almetl" Door by far the best and strongest on the market; while the absence of any wood core makes it considerably lighter in weight than the standard three-ply tin-clad fire door.

The Evans "Almetl" Fire Door is of attractive appearance, and when painted to harmonize with its surroundings it is a far better looking door than any other

type that could be used for the same purpose and under like conditions. There is nothing to bulge and become unsightly, as with tin-clad wooden doors.

It is also very durable and does not require repairs even when installed in large warehouses where there is constant hauling of trucks through openings or doorways. On the other hand, the accidental impact of trucks against tin-clad doors has always resulted in damage to the thin tin covering of the wood core doors and frequently results in punctures that must be immediately repaired if the door is to act as an efficient fire stop.

Under actual tests our Evans "Almetl" Fire Door has successfully withstood the intense heat of a fire of 2000 degrees Fahrenheit.

## FACTS ABOUT EVANS "ALMETL" FIRE DOORS

1. Evans "Almetl" Fire Doors average in weight not more than five pounds per square foot and therefore weigh much less than standard three-ply wood core tin-clad fire doors.
2. There are no maintenance charges to be considered, as they contain no wood or other material subject to deterioration.
3. The structural details are always in full view.
4. They are designed to withstand intense heat for long periods of time, and yet radiate it to only a slight degree.
5. The rigid construction offers maximum resistance to any sudden lowering of temperature, or impact force from application of high pressure fire streams.
6. The Evans "Almetl" Fire Doors are of more attractive appearance than tin-clad fire doors and positively much more durable.
7. The improved design of the "Almetl" Door has reduced the radiation of heat and passage of flames to a minimum.
8. Evans "Almetl" Fire Doors can be used with any style of Underwriters' Approved Fire Door Hardware, and with any type of operating device used for solid panel freight or pier shed doors. It is necessary, however, that we furnish a few special fixtures with all our doors, owing to their original and improved design.
9. In addition to the numerous air passages formed by the cross-laid corrugated steel panels, there is a lining between these panels of asbestos roll board, extending the full size of the door.
10. The heavy reinforcing steel binder on the edges prevents damage to frame from trucking.
11. Evans "Almetl" Fire Doors can be fitted with metal trim to match interior decorative effects.
12. We can readily supply our doors with wired glass panels, or with wicket gates, or recessed at top for mono-rail or overhead trolley track.



Fac-simile of Underwriters' Label placed on Evans "Almetl" Fire Doors



# Necessary data to be furnished us when you ask for quotations or send orders for Evans "Almetl" Fire Doors

A. The precise style of door, whether sliding or swinging, etc., must be clearly mentioned; also whether top of door is to be square, inclined or arched.

B. It must be distinctly stated whether doors are single or double and whether wanted for both sides of an opening or one side only. If both sides, mention whether the fixtures can be bolted together.

C. The direction of motion of doors, whether right or left, must be distinctly given, **as doors are not reversible.**

D. A precise statement as to the sort of hardware desired, whether wrought or malleable, is necessary.

E. Each inquiry or order must state:

1. Number of openings, and number of doors required for same.
2. Whether openings are square or arched top.
3. Height of center of opening.
4. Height of side of opening.
5. Width of opening.
6. Thickness of walls.
7. Distance from highest point of opening to nearest obstruction overhead. **Note.** Square top openings should have 14" headroom at edge of opening, and  $\frac{3}{4}$  of an inch more for each foot of track beyond that point. Arched top openings should have 14" headroom above top of the arch, and  $\frac{3}{4}$  of an inch more for each foot the track extends beyond the center. Always state nature and location of any obstructions above top of opening, or on side walls.
8. Distance from edge of openings to wall at right angles, if any, to provide sufficient space for wall binders.

F. Mention kind of sill, and if raised, the height of same from the floor.

G. For swinging doors, state if they are to overlap the openings. If not, and they are to fit flush with the wall, always mention whether the opening (or frame, if used) is of the rabbeted type, and give depth and width of rabbet.

H. If channel irons or steel door frames are used, state width of same on wall side.

I. If doors are to be enclosed in pockets, 4" clearance room must be provided for sliding of doors and hardware.

J. State whether walls are concrete, brick, or stone, etc.

K. If **unapproved** steel lintels are employed, state height of same, as doors must overlap masonry work 4" above upper edge of lintel.

L. If hinge pins or eye blocks are already set for swinging doors, give diameter of same; also distance from center of pin to face of wall, and distance from center of pin to edge of opening.

M. For openings having scant headroom, either straight or drop bracket type hardware must be used, at special prices.

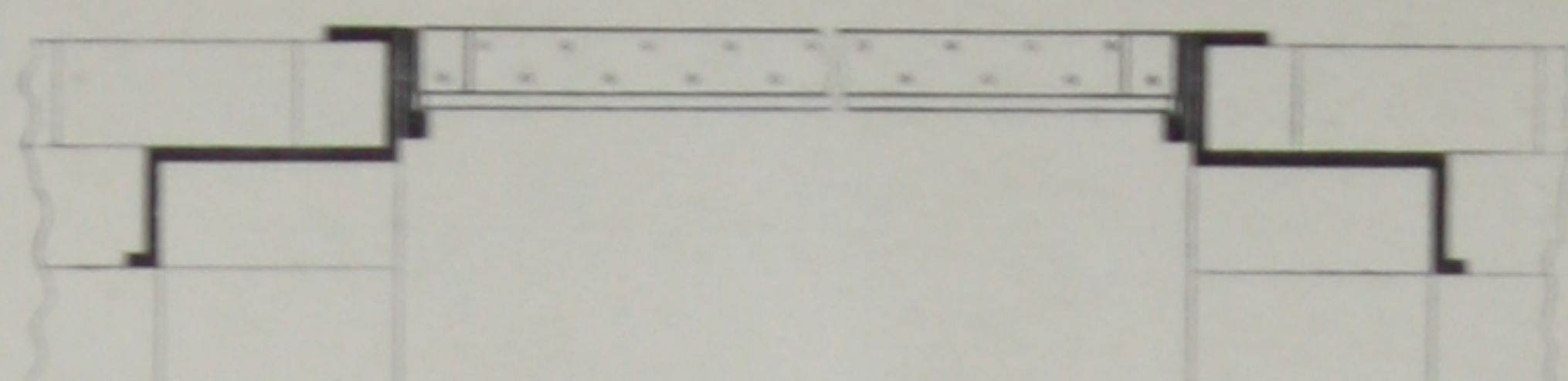
N. For vertical sliding doors, furnish necessary data from above information and give particular consideration to headroom above opening, and wall room on each side of opening.

O. A precise statement as to what insurance jurisdiction is concerned (whether Stock or Mutual and name) must be marked on each order.

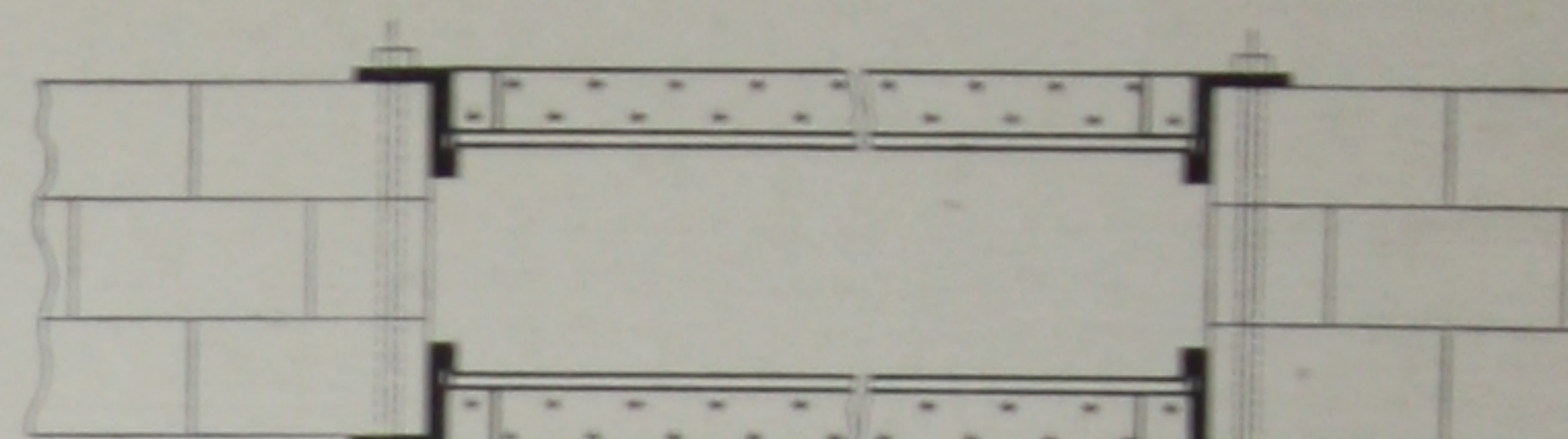


Fac-simile of Factory Label used on all Evans "Almetl" Fire Doors — your protection on dependable manufacture

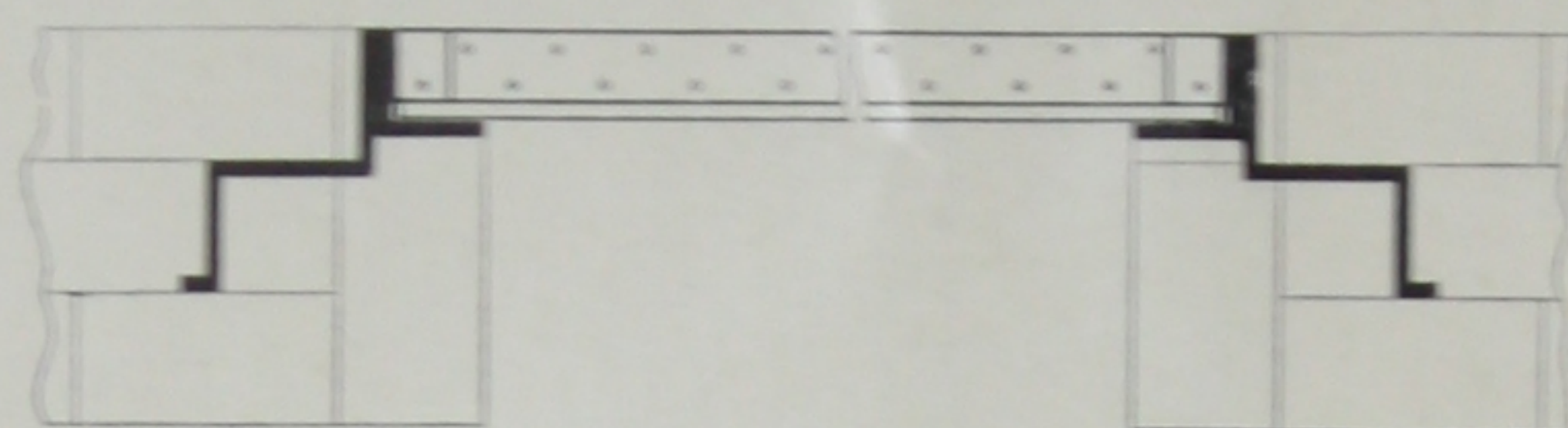




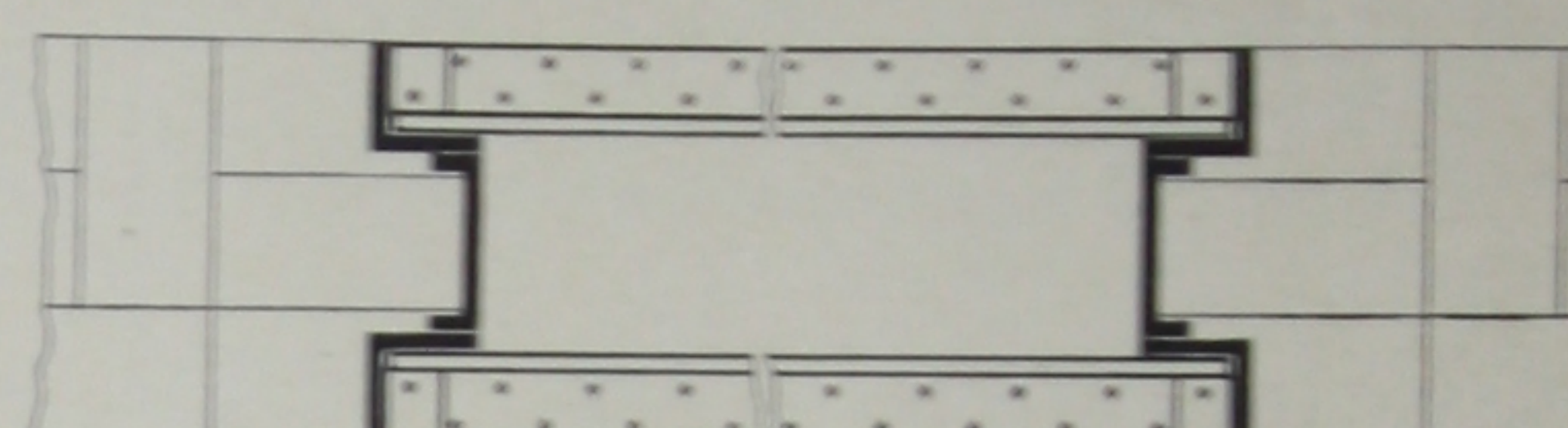
FLUSH DOOR FOR ONE SIDE OF OPENING—  
NOT RABBETED FRAME



FLUSH DOORS FOR BOTH SIDES OF OPENING  
—NOT RABBETED FRAME



Flush Door for ONE side of opening. Rabbeted Frame.



Flush Doors for BOTH sides of opening. Rabbeted Frame.

## Types of Evans "Almetl" Fire Doors

Single Sliding, Right-Hand or Left-Hand.  
Double Sliding.  
Single Swinging, Right-Hand or Left-Hand, Overlap.  
Single Swinging, Right-Hand or Left-Hand, Flush (for Rabbeted opening).  
Single Swinging, Right-Hand or Left-Hand, Flush (not for Rabbeted opening).  
Double Swinging, Overlap.  
Double Swinging, Flush (for Rabbeted opening).  
Double Swinging, Flush (not for Rabbeted opening).  
Vertical Sliding.  
Horizontal Lifting.  
Wired Glass Panel Doors.  
Recessed Doors, for Mono-rail or Overhead Trolley.  
Irregular Shaped or Special Doors.

Sliding Doors, either Single or Double style, are made with Inclined Top, or **straight** (level) top, or **arched** top, as may be required; and Swinging Doors—either single or double—can be made with level top or arched top, as desired. **Arched** tops are special.

**Note.**—We furnish **two-link** fixtures, with all Single Sliding or Single Swinging Doors; and **three-link** fixtures with all Double Sliding or Double Swinging Doors, **excepting** Level Track and Special Level Drop Bracket Hardware, with which **one** Fusible Link only is supplied. Horizontal Lifting Hardware is supplied with **four** Fusible Links.

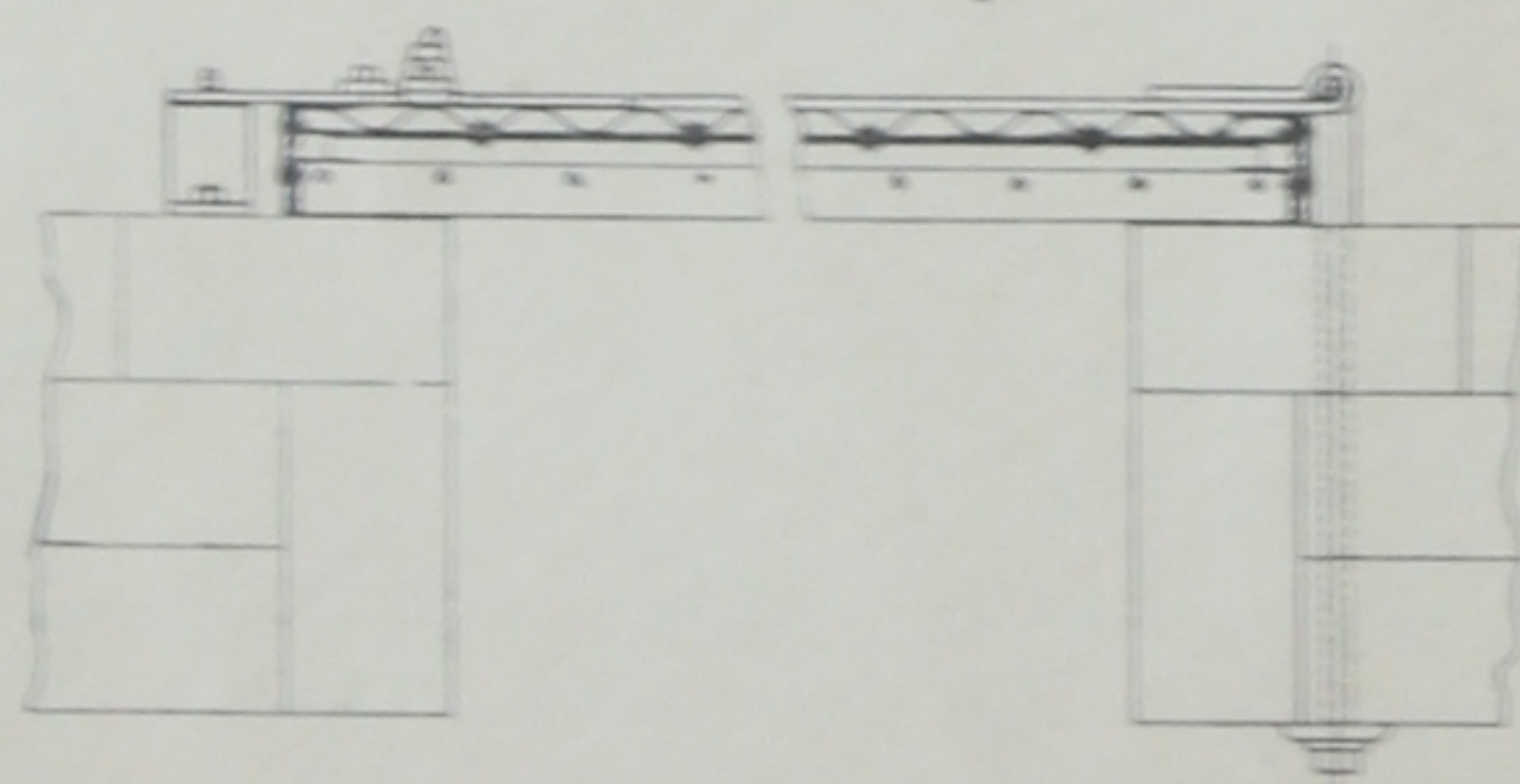
When doors are to be used on both sides of the wall (or opening) **double** sets of hardware will be required, and the price will accordingly be doubled.

Wall Bolts are never included with any hardware, unless specially ordered, and Counter-balance Weights are not included with Vertical Sliding Door Hardware, unless so ordered.

It is sometimes necessary to conceal Fire Doors in a "Pocket" when used to protect Elevator Shafts and Corridors. In such cases our door, after being hung on the fire wall, is screened by a tile or curtain wall, which is held in place by steel bucks. The fire wall opening is framed with channel iron and front edge of door can be covered with art metal to match finish of jamb. Very complete details are needed for this installation and provision must be made for clearance room.

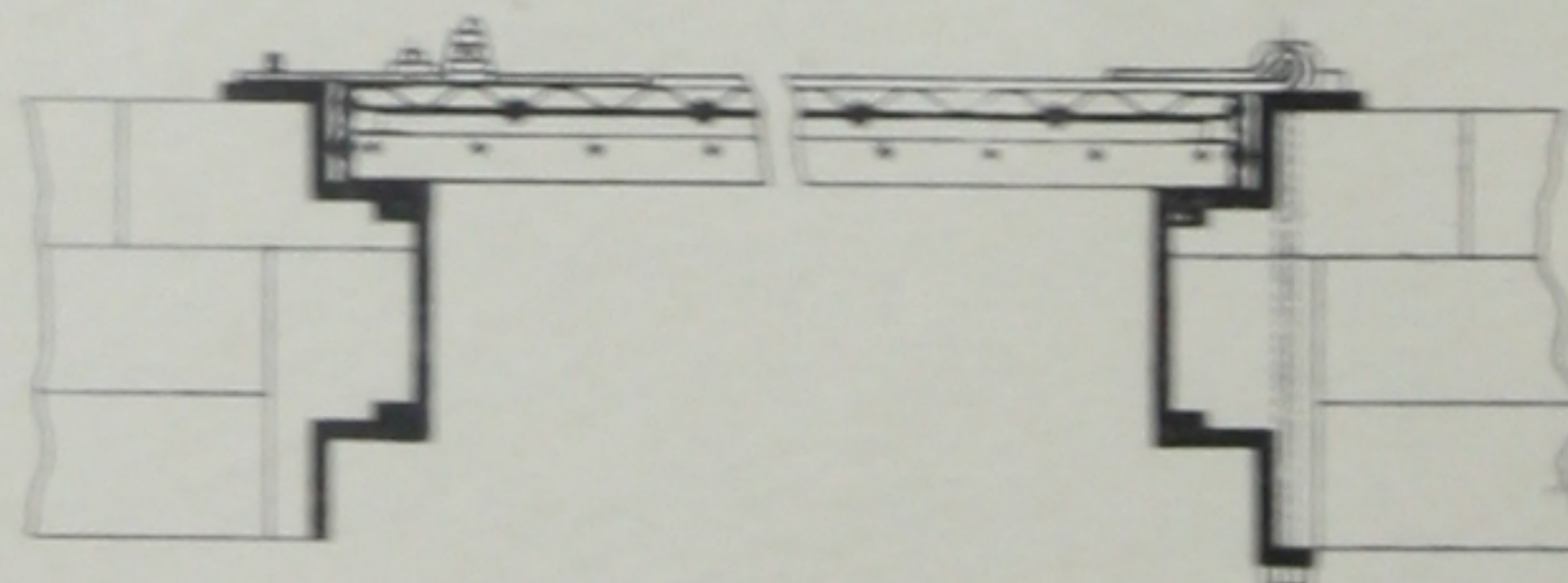
## Information About Swinging Doors

There is so much misunderstanding about Swinging Doors that the following information is given to clearly indicate the different styles:



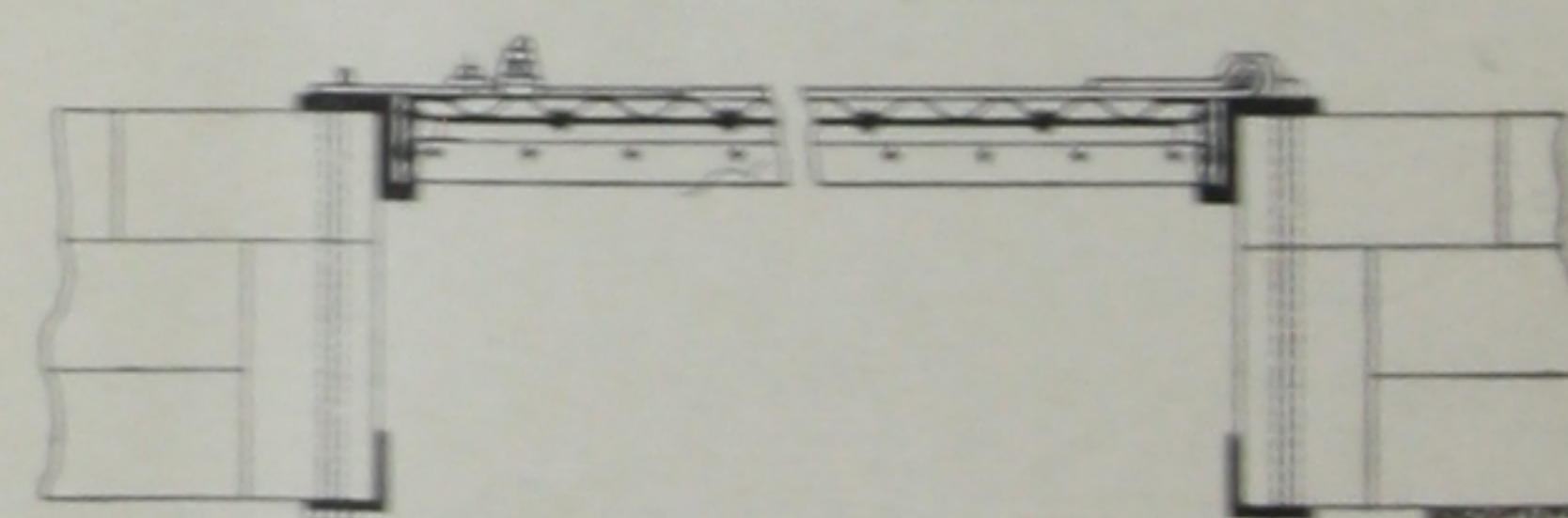
Plan of Overlap Door.

This type of door overlaps the opening 4 inches on each side and 4 inches at top, but if Lintels are not of "approved" type the overlap at top must be 4 inches above the upper edge of the lintel.



Plan of Flush Door, with Angle Iron Frame,  
Rabbeted Type

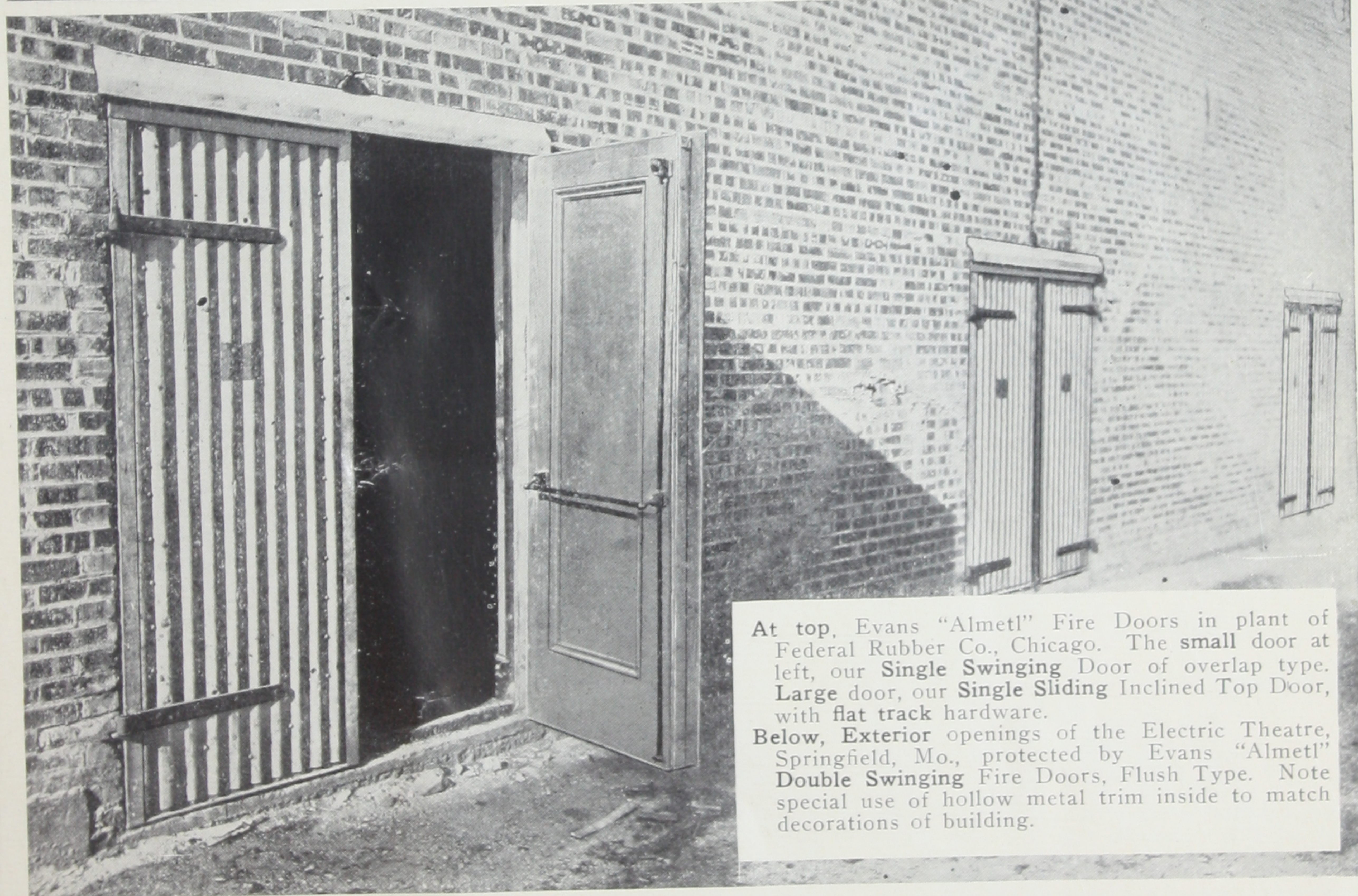
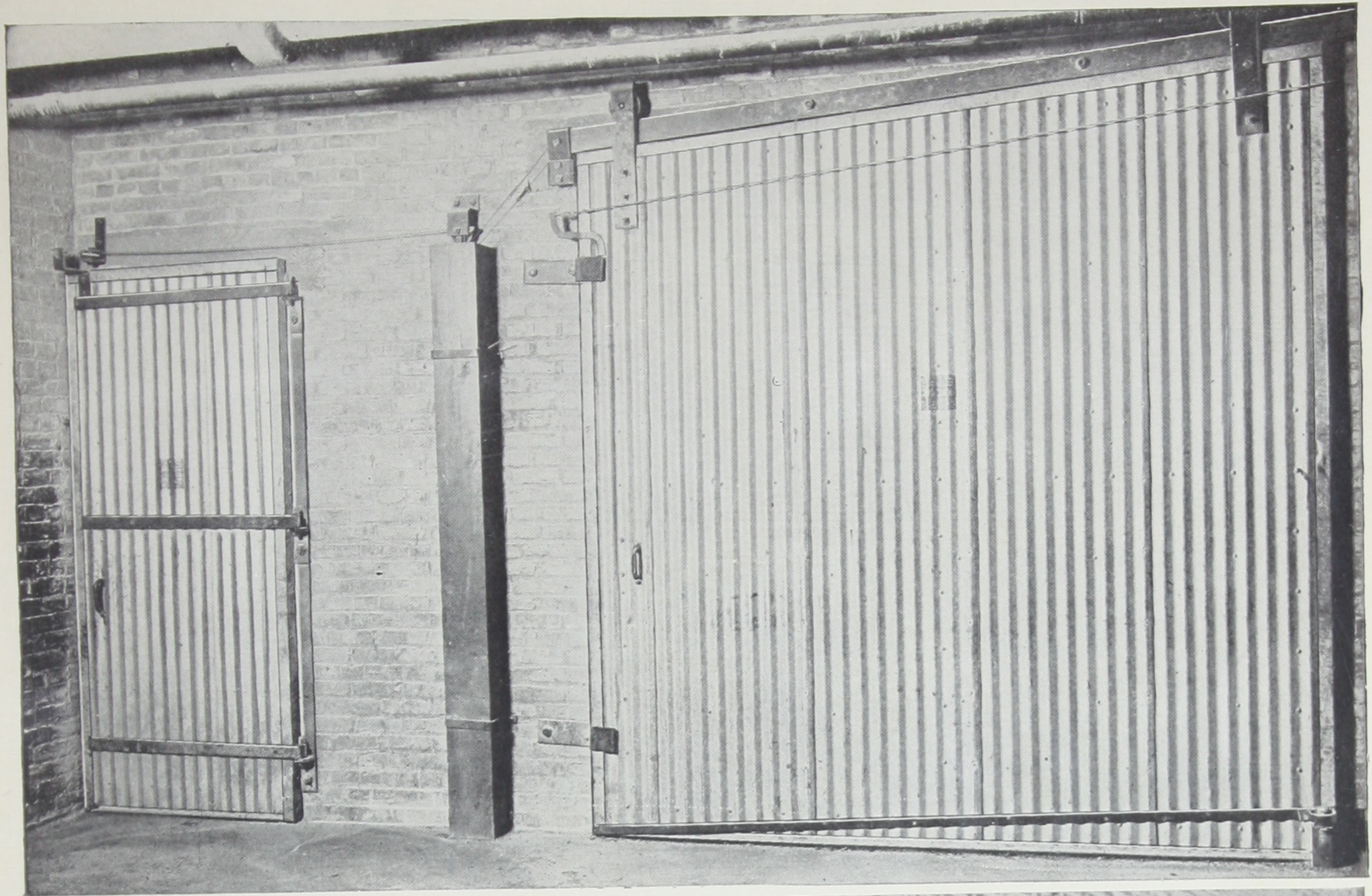
This type of door overlaps the **mean** dimensions of wall openings 4 inches on both sides and at top. When manufacturing the door we make sufficient allowance to prevent it from fitting too tightly.



Plan of Flush Door, with Angle Iron Frame  
for Face of Wall.

This type of door is relatively the same size as opening, but must be measured between faces of Angle Iron Frame (if used). When manufacturing the door we make sufficient allowance to prevent it from fitting too tightly.

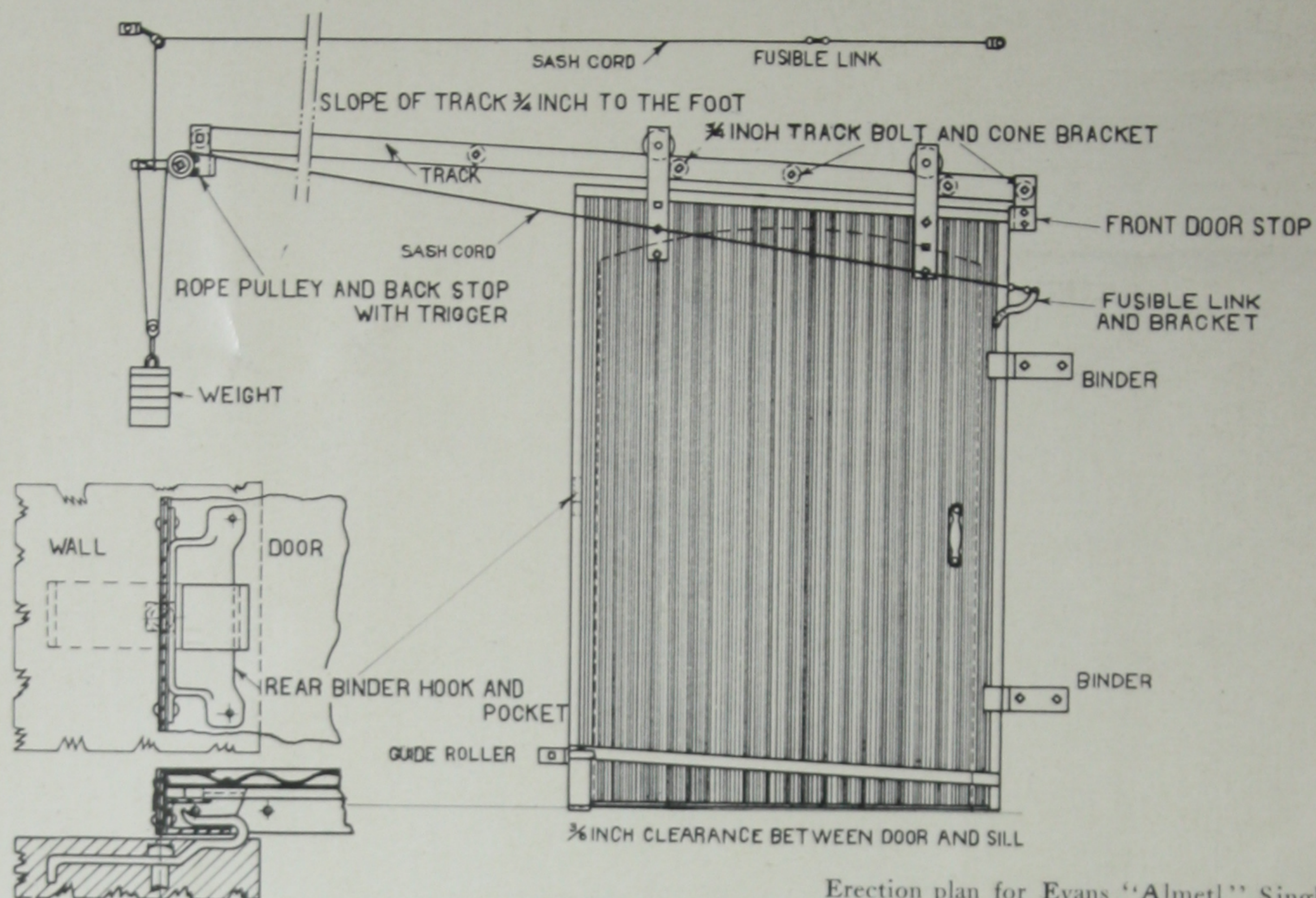




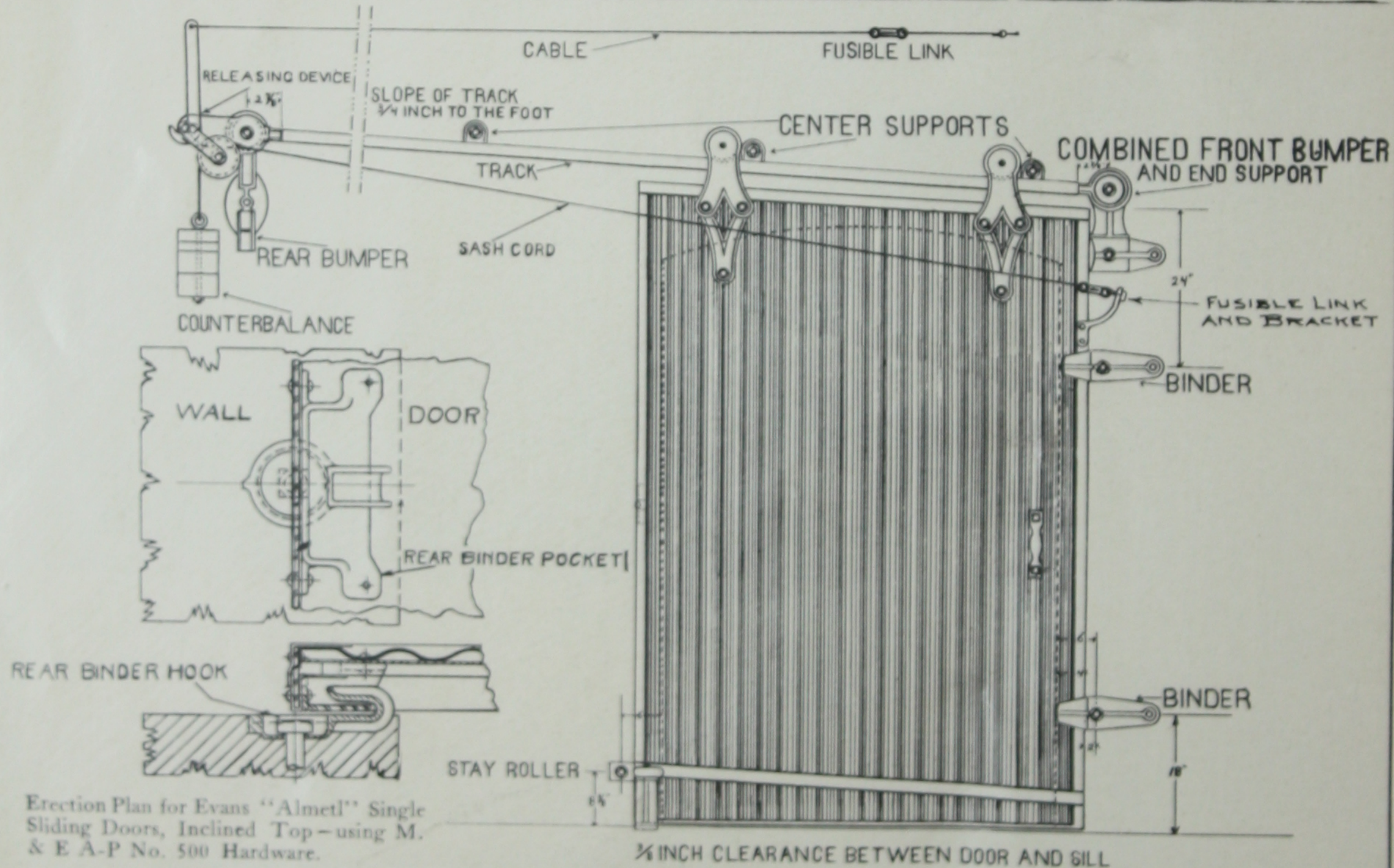
At top, Evans "Almetl" Fire Doors in plant of Federal Rubber Co., Chicago. The small door at left, our **Single Swinging Door** of overlap type. Large door, our **Single Sliding Inclined Top Door**, with flat track hardware.

Below, Exterior openings of the Electric Theatre, Springfield, Mo., protected by Evans "Almetl" **Double Swinging Fire Doors**, Flush Type. Note special use of hollow metal trim inside to match decorations of building.



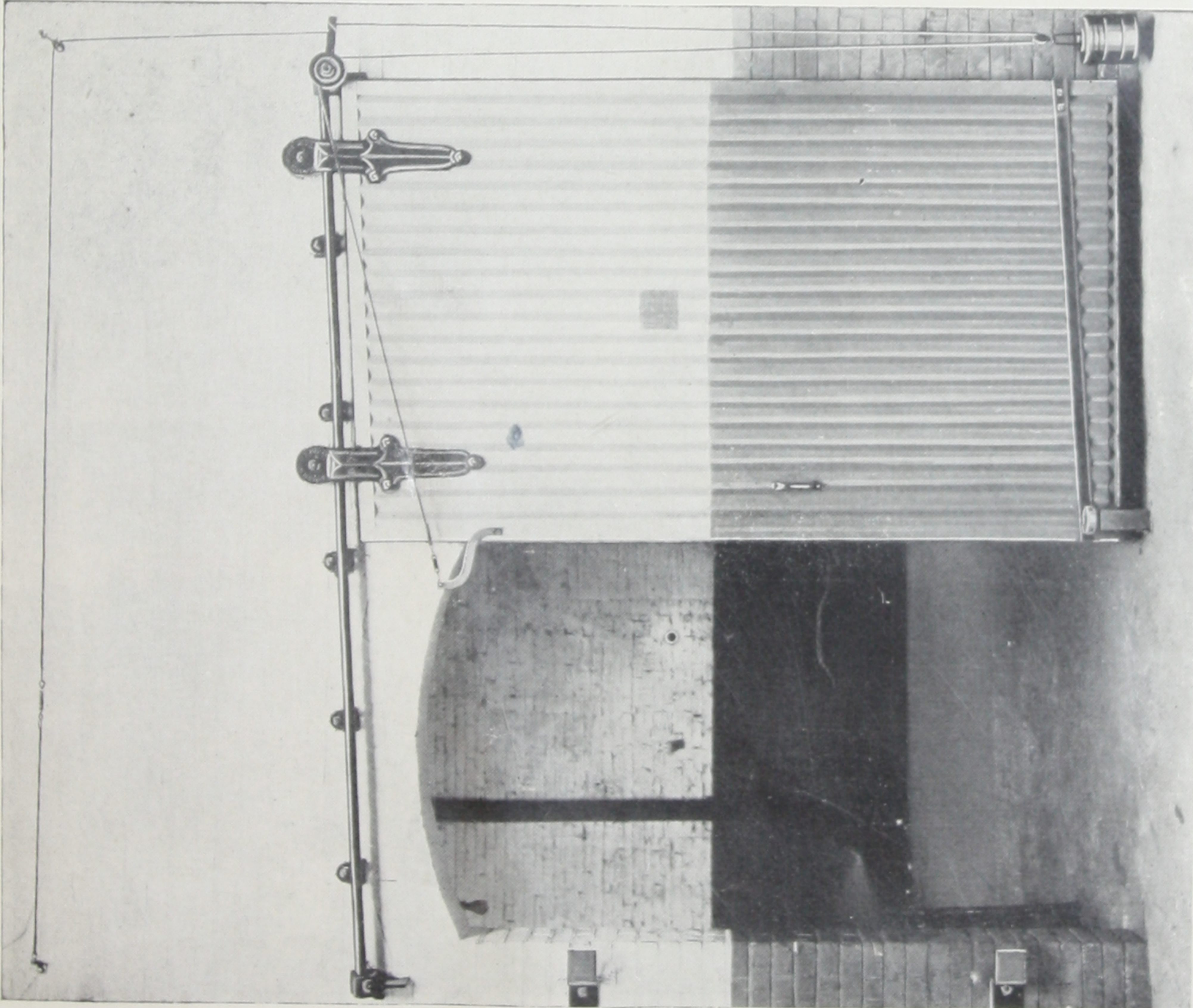
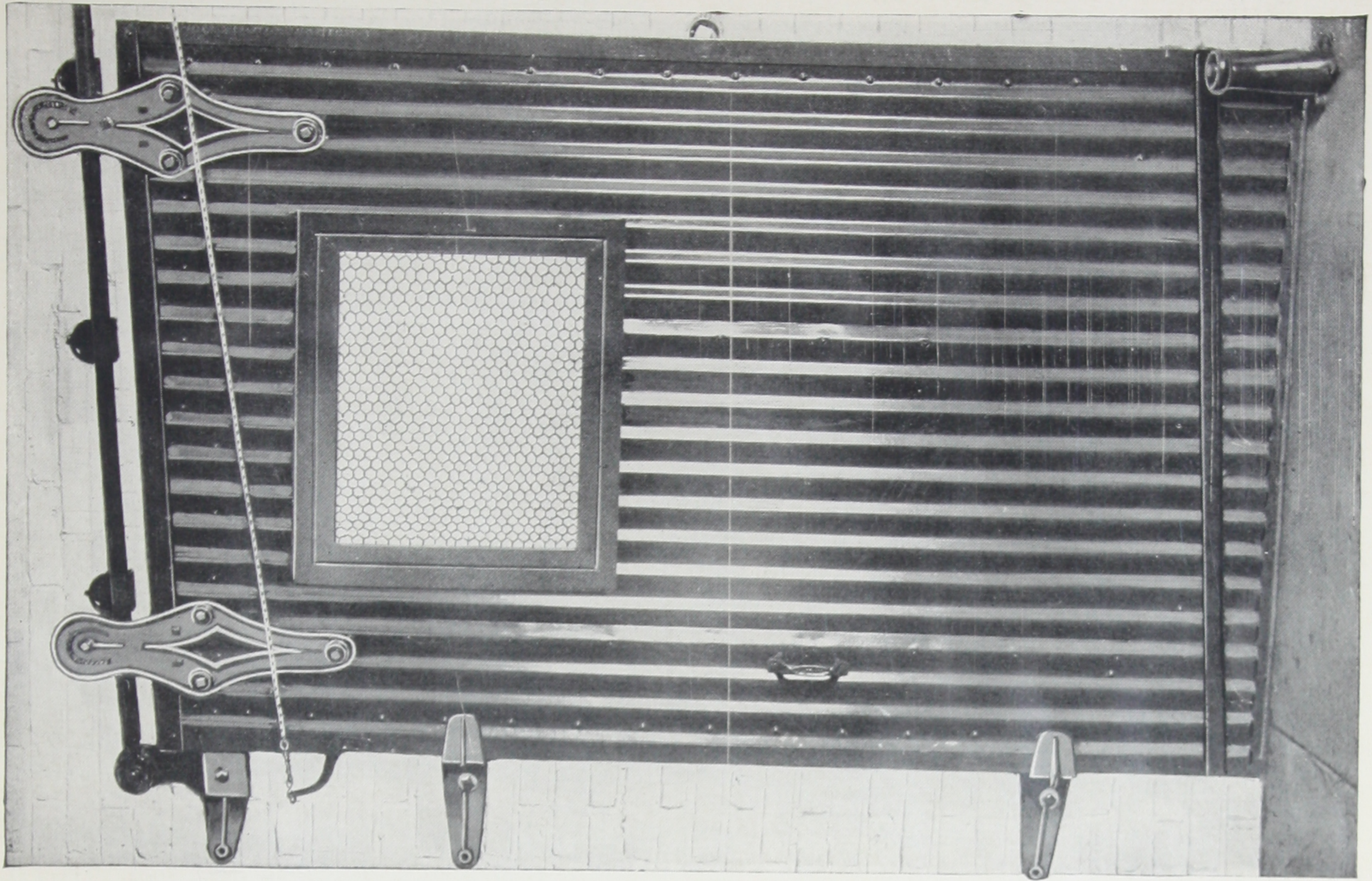


Erection plan for Evans "Almetl" Single Sliding Fire Doors, Inclined Top—using M. & E. R-W. No. 102 Hardware.



Erection Plan for Evans "Almetl" Single Sliding Doors, Inclined Top—using M. & E. A-P No. 500 Hardware.





Above, Evans "Almetl" Single Sliding Fire Door, inclined top, in our Philadelphia plant. Round track, 2-link hardware.

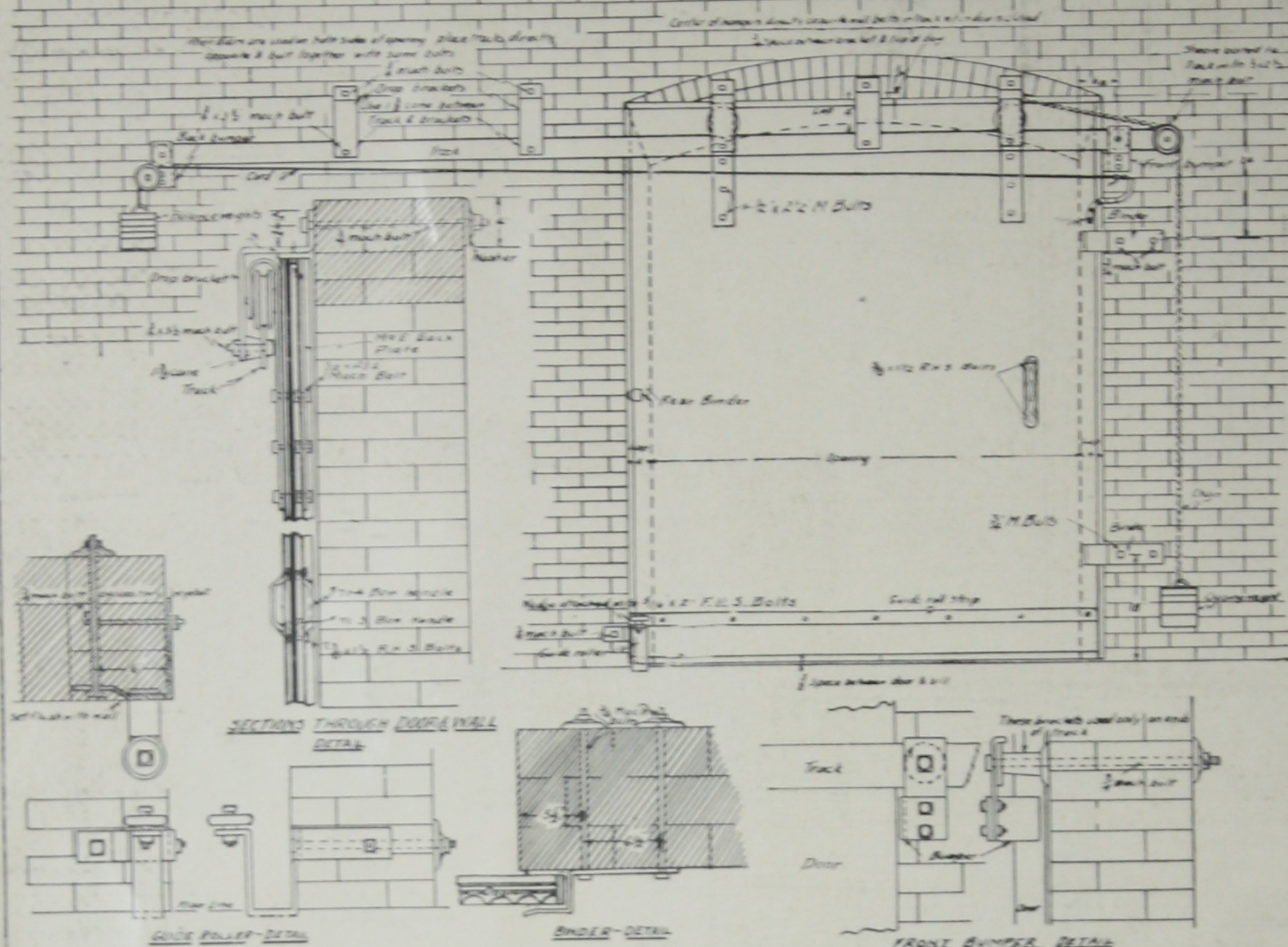
At right, Evans "Almetl" Single Sliding Fire Door, with polished, wired glass panel. (Now approved and labeled.) Round track hardware.

NOTE.—Evans "Almetl" Doors are rigid in plane, and indestructible in use.

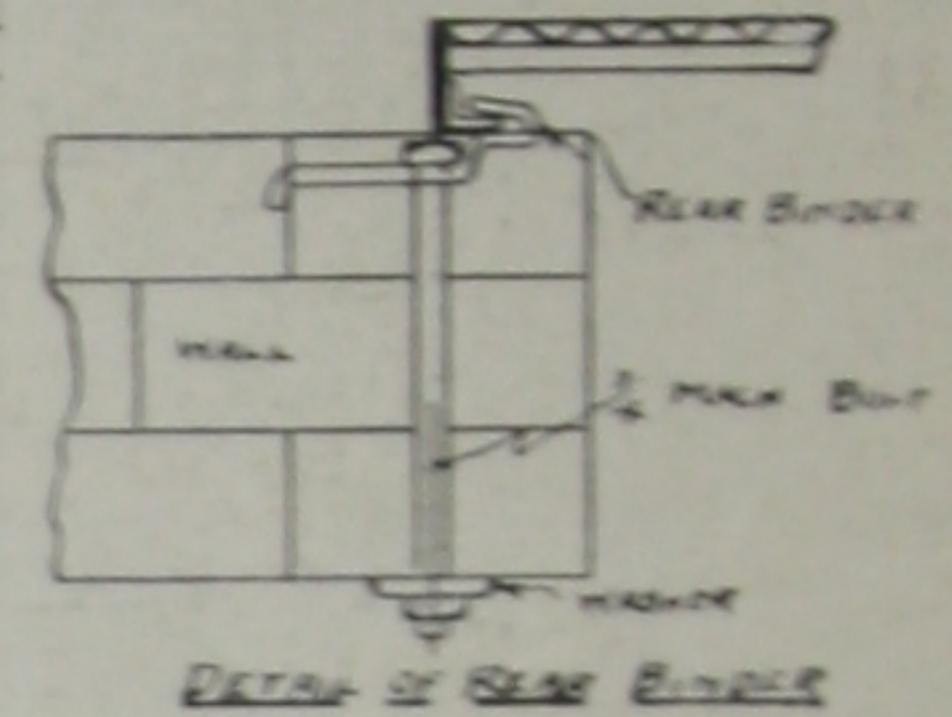


### NR304 M & E LEVEL TRACK FIRE DOOR FIXTURES

REQUIRE 9 IN. HEADROOM OPENING. IF BRACKETS CAN BE SET BETWEEN JOISTS 24 IN. SPACING REQUIRED.

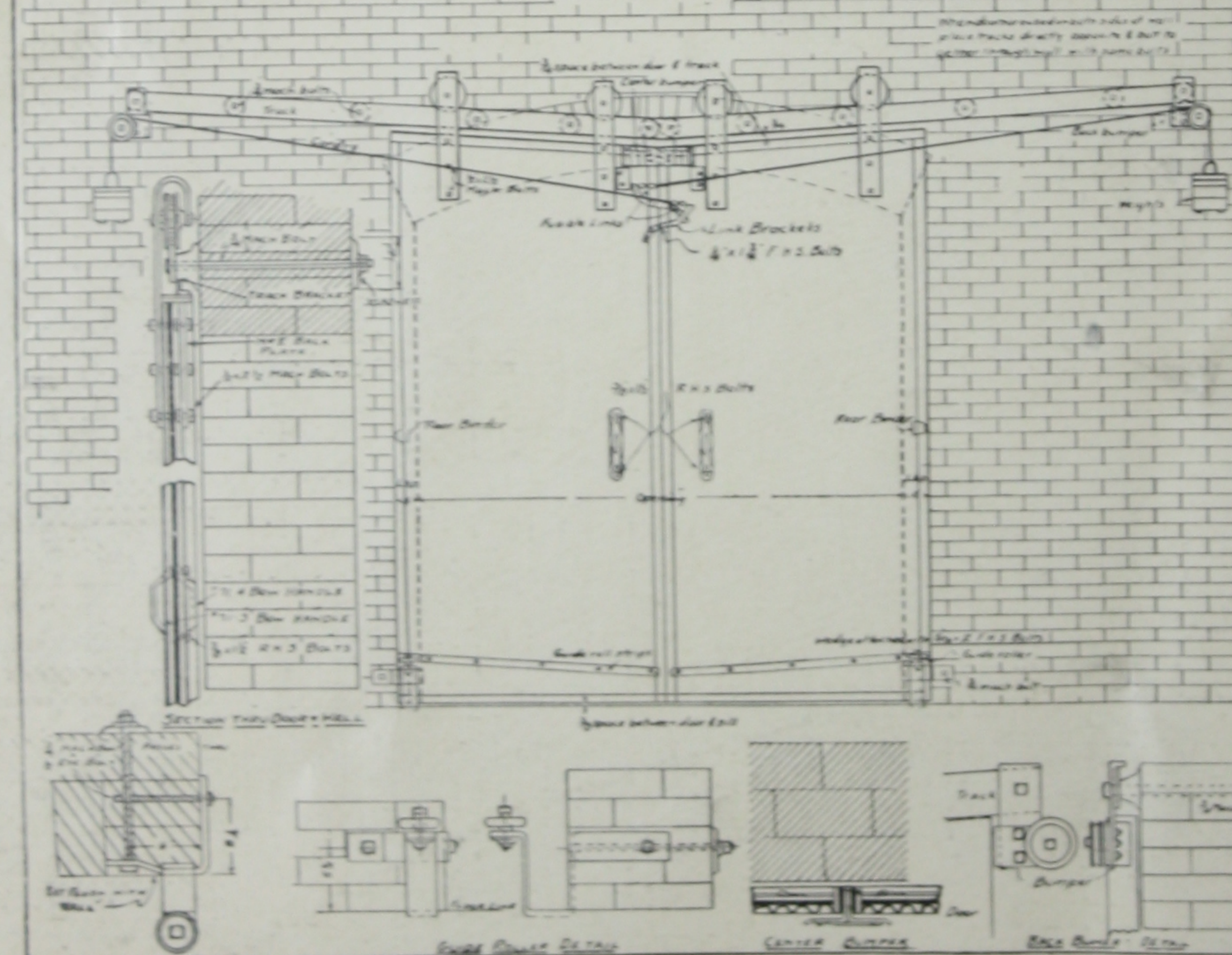


Erection plan of  
Evans "Almetl"  
Single Sliding Fire  
Doors, using Level  
Track, Drop Bracket  
Hardware.

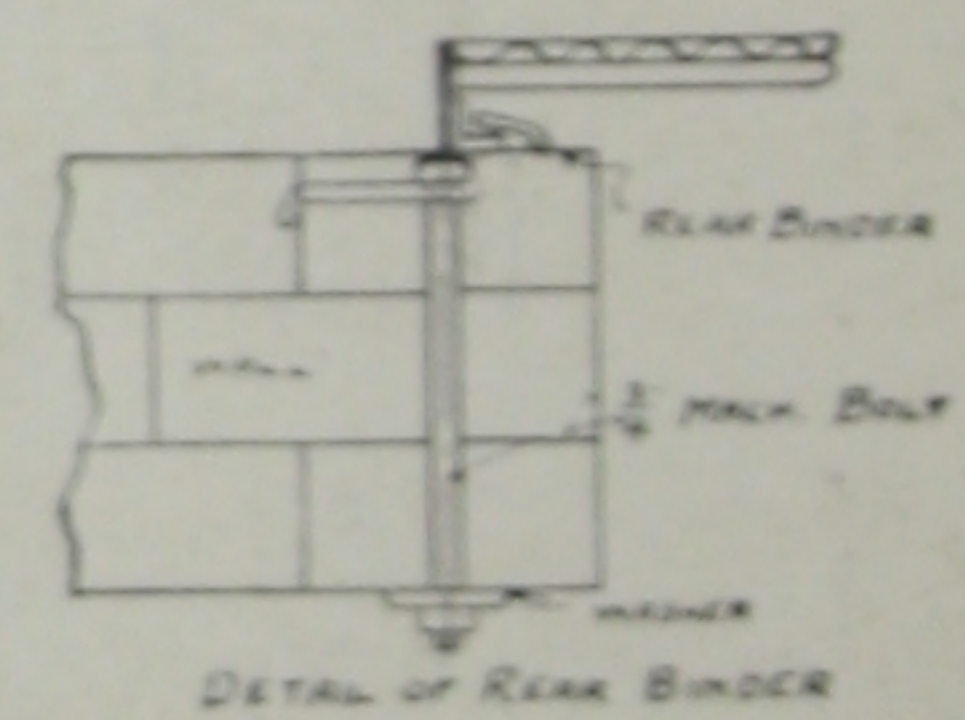


This fixture requires  
9 in. headroom. Can  
furnish 1 ft. headroom as  
low as 7 1/2 in. when re-  
quired. 19 in. side wall  
space required at closing  
edge. Width of open-  
ing plus 19 in. at rear  
edge.

### R-W NR304 M & E FIRE DOOR FIXTURES FOR DOUBLE DOORS

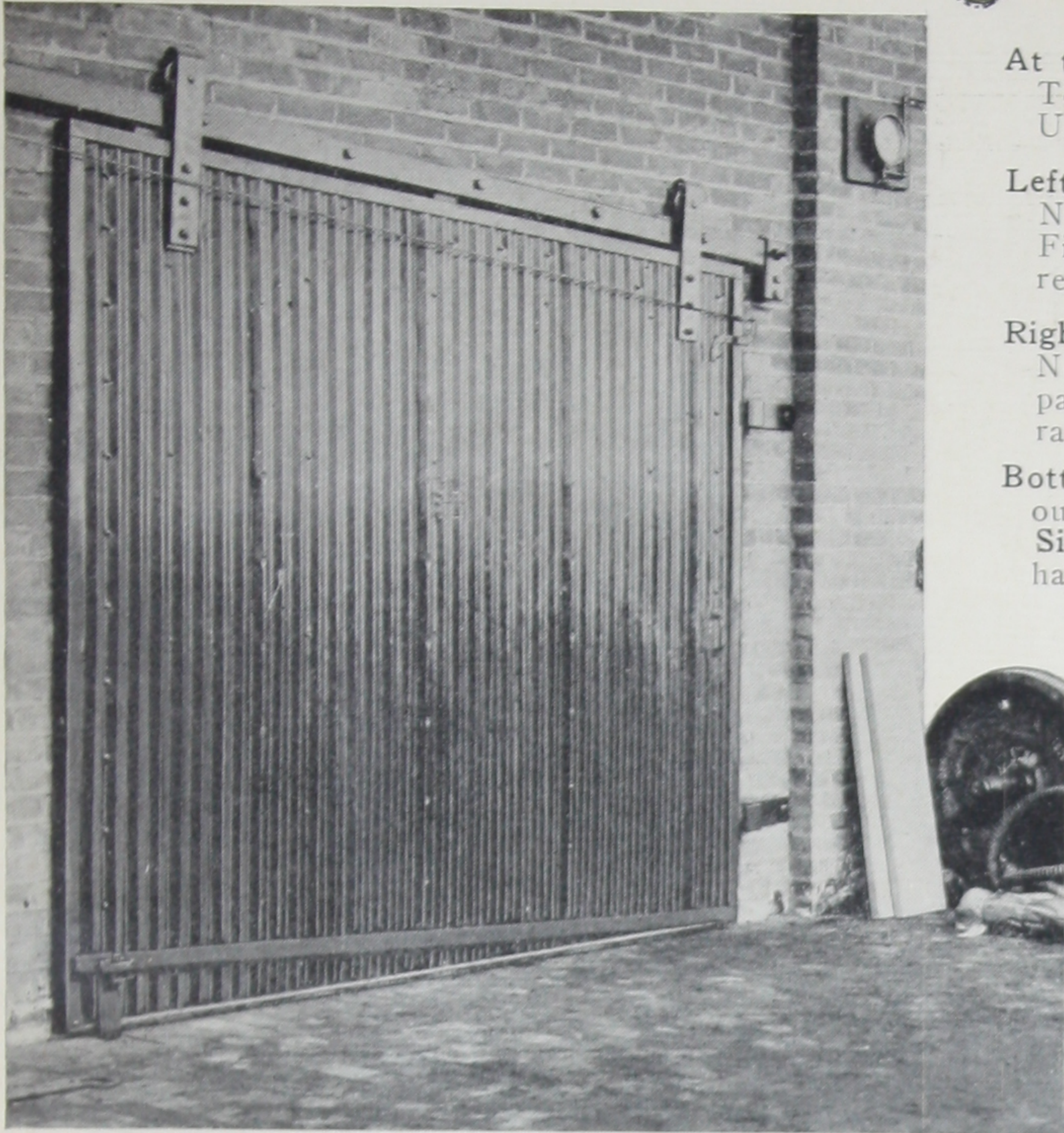


Erection plan of  
Evans "Almetl"  
Double Sliding Fire  
Doors, with Flat  
Track Hardware.



This fixture requires 14  
in. of headroom and 3/4 in.  
of 1 in. more for each foot  
of track.  
Side wall space required  
at rear edge equals 1/2 width  
of opening plus 15 in.



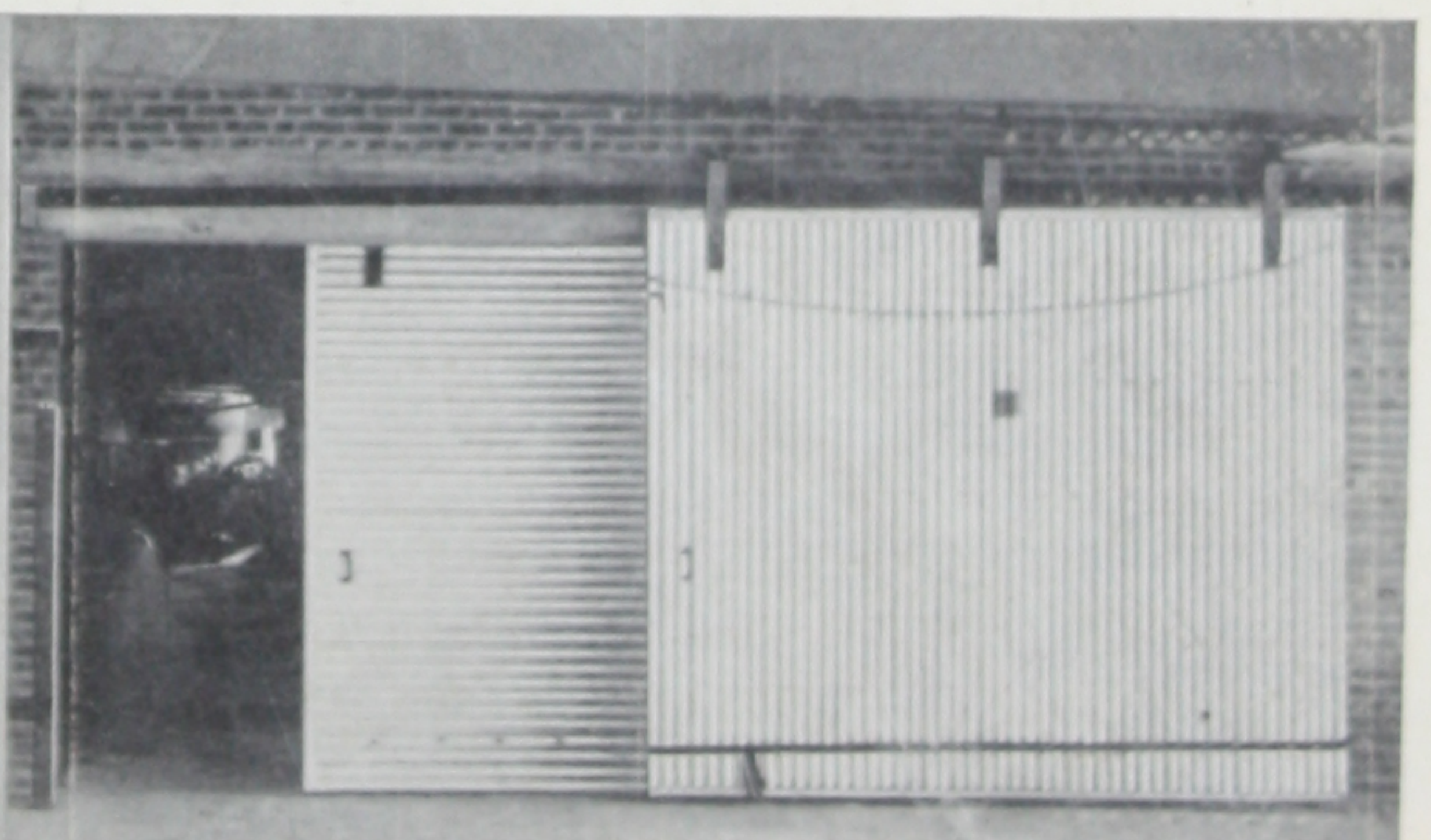
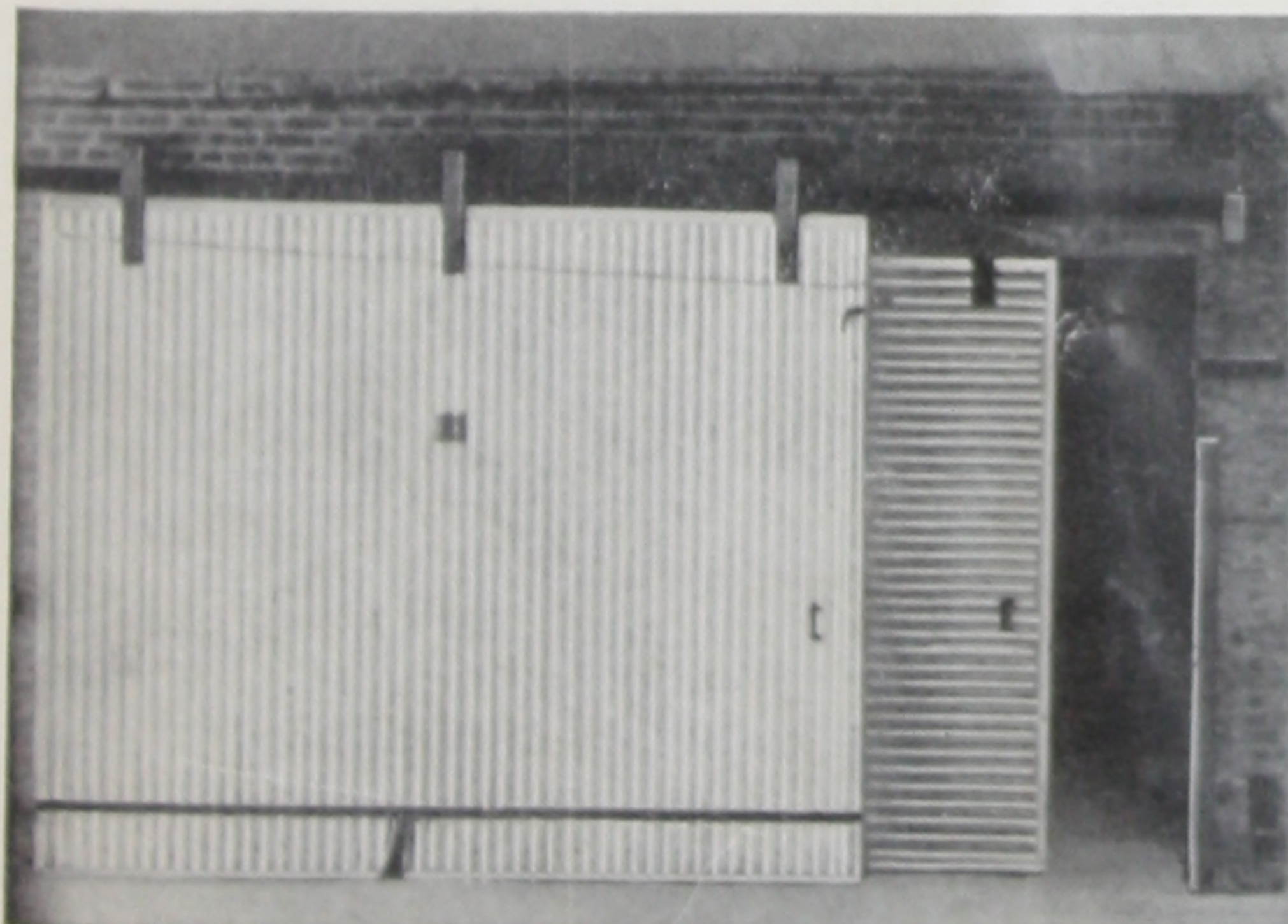
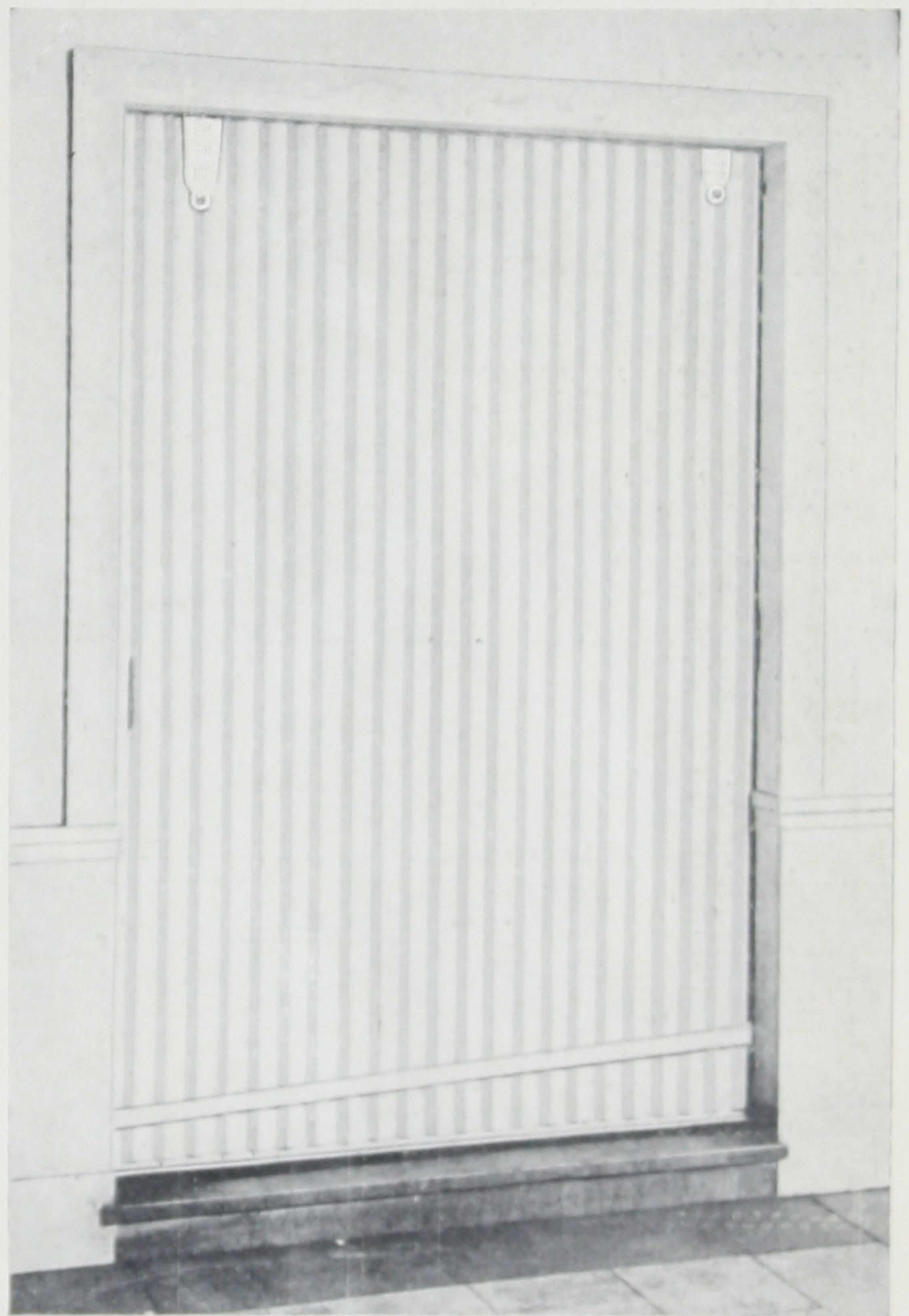
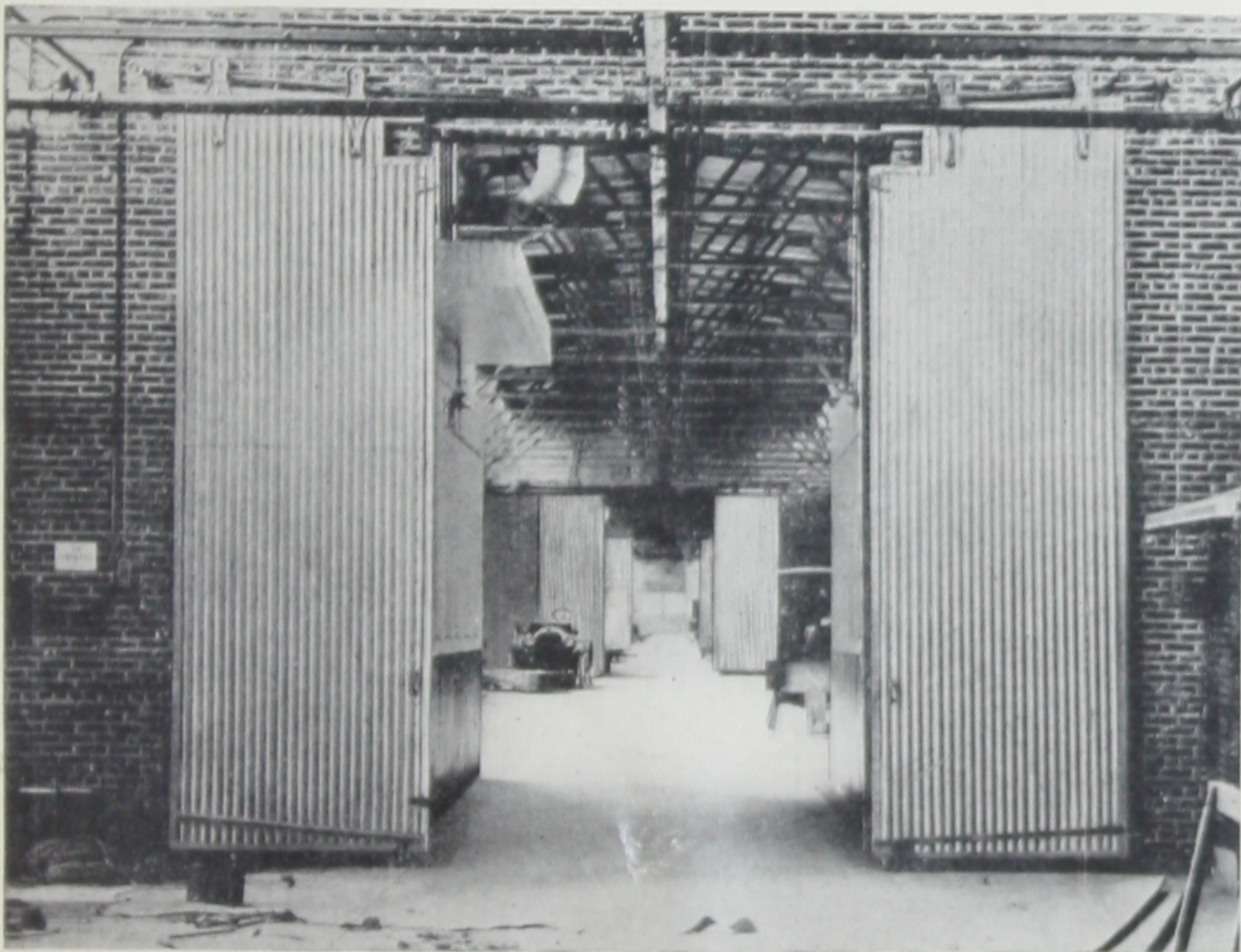


At top, Evans "Almetl" Single Sliding Fire Doors, Inclined Top with flat track hardware, in Warehouse of Detroit United Railway Co., Detroit, Mich.

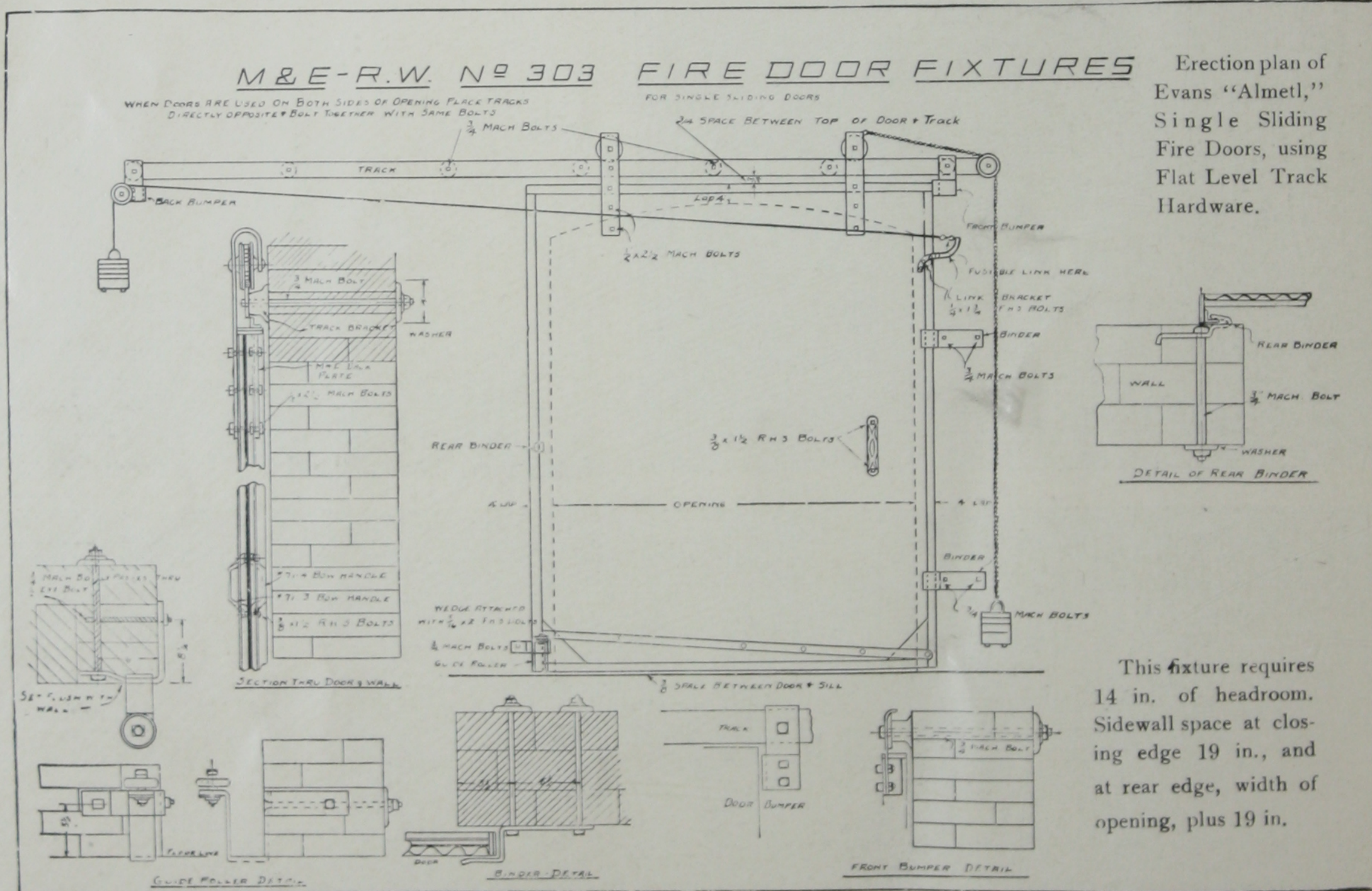
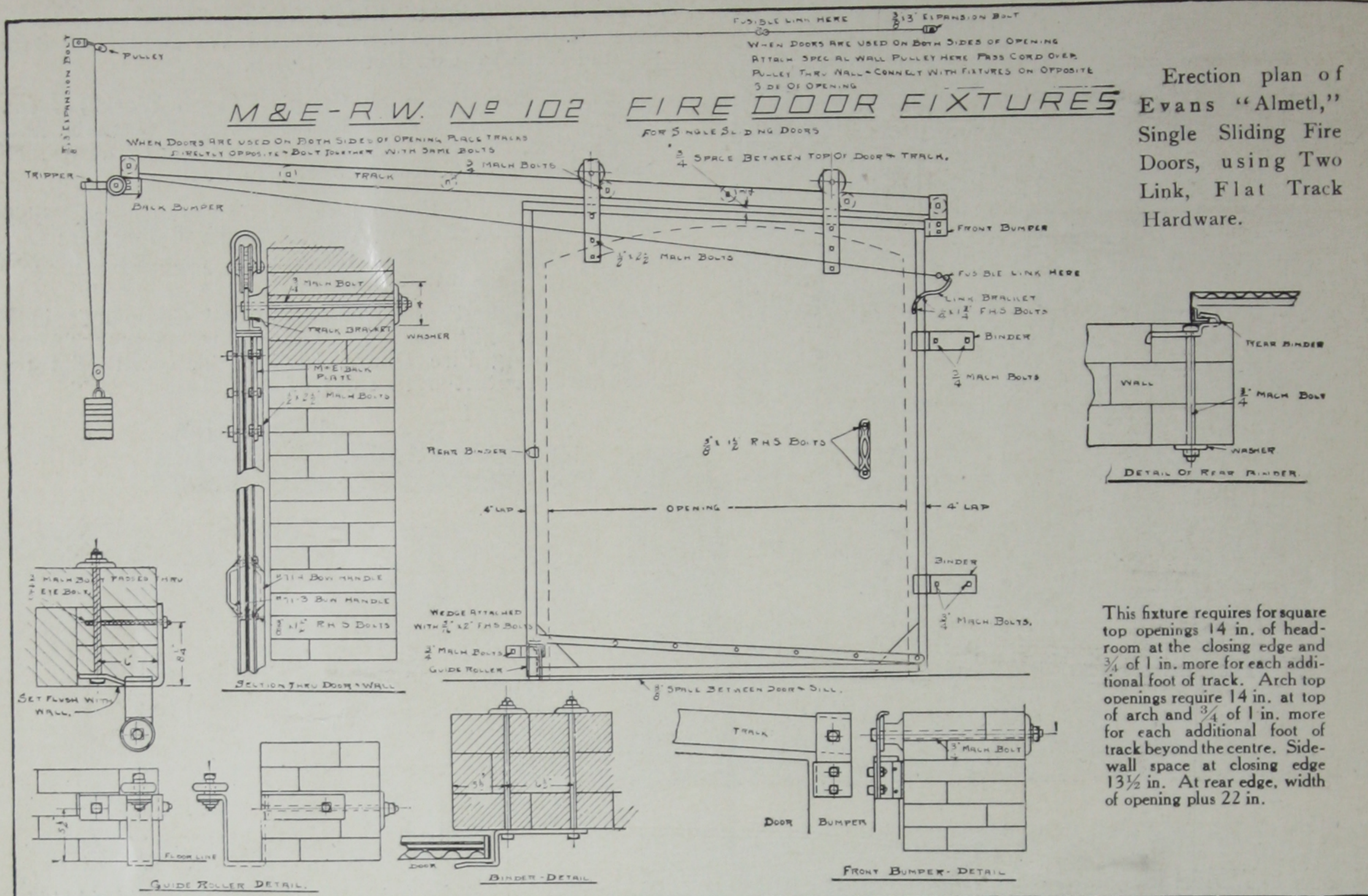
Left center, Fitzgibbons & Crisp's Wagon Works, Trenton, N. J., showing series of Evans "Almetl" Double Sliding Fire Doors, Inclined Top, with round track hardware. Note recess at top of doors for overhead track.

Right center, Wells Fargo Express Company office building, New York City. Evans "Almetl" Single Sliding Fire Doors, painted white to match the marble walls and floor; arranged to slide into the wall.

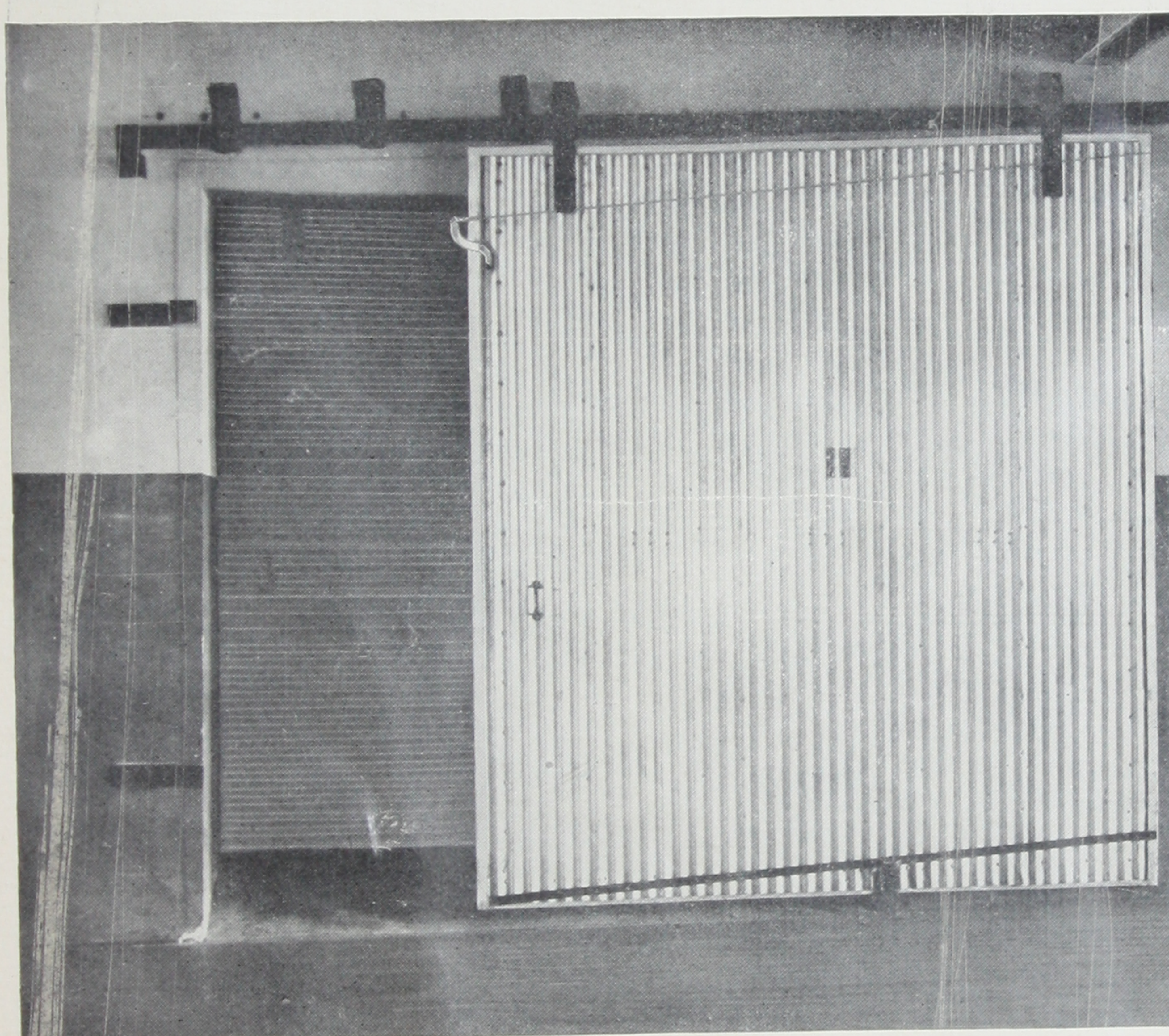
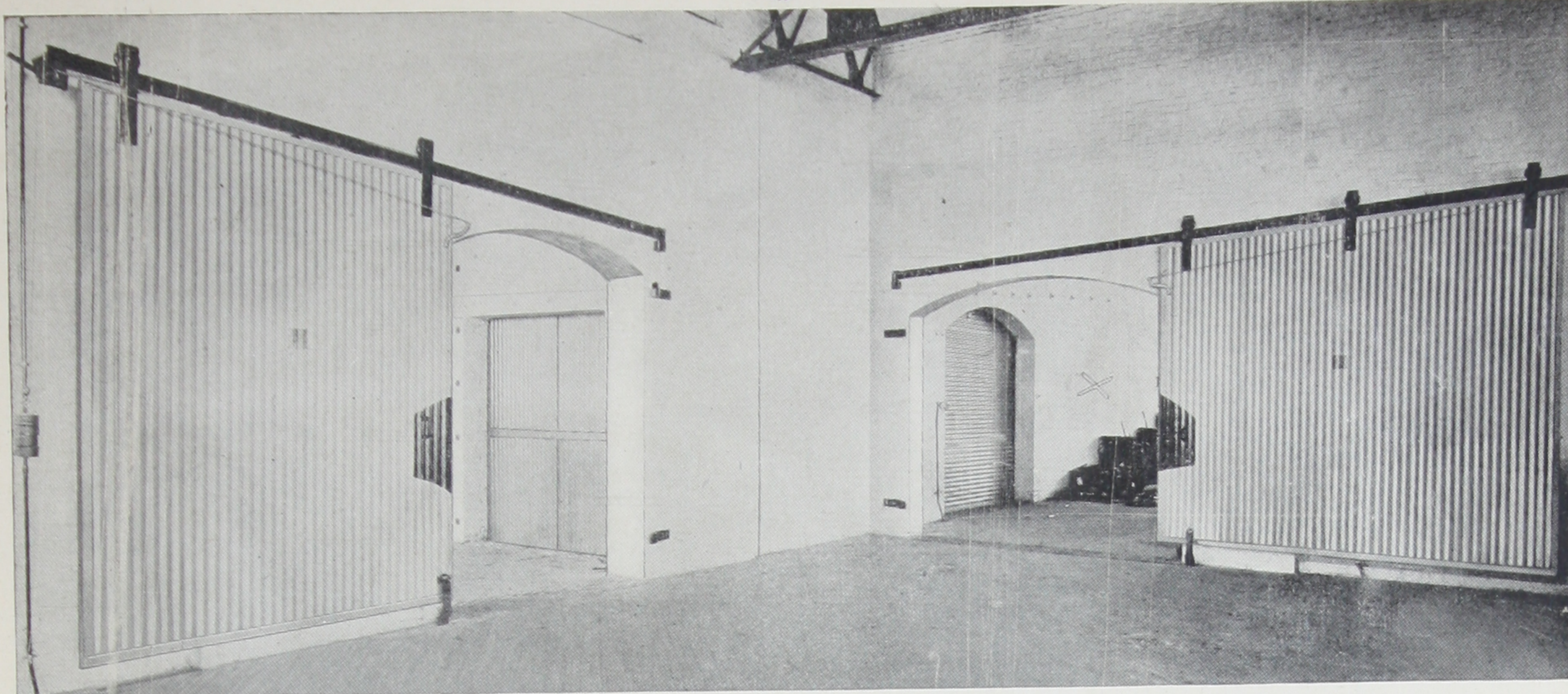
Bottom of page, Pennsylvania Railroad Company's in and outbound freight station, Philadelphia. Evans "Almetl" Single Sliding Fire Doors, Inclined Top, with flat track hardware, protect both sides of openings.







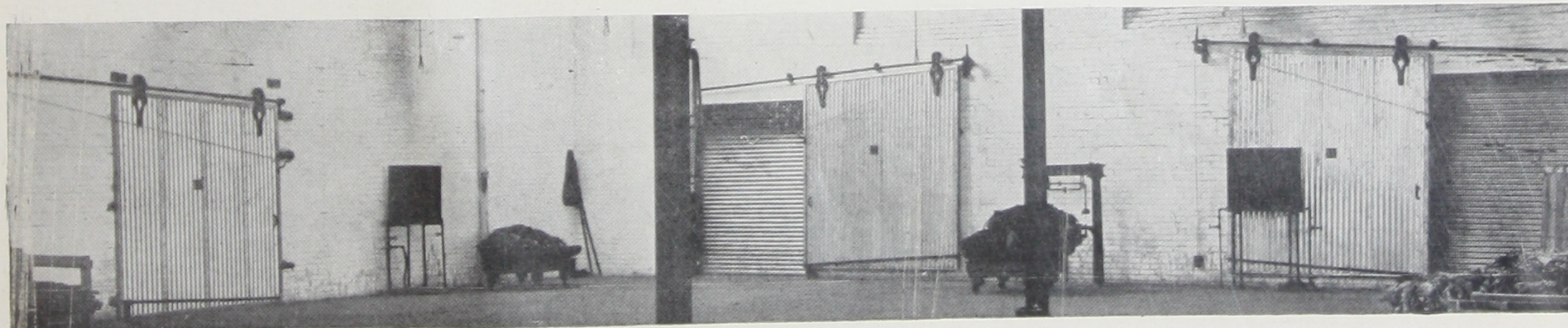




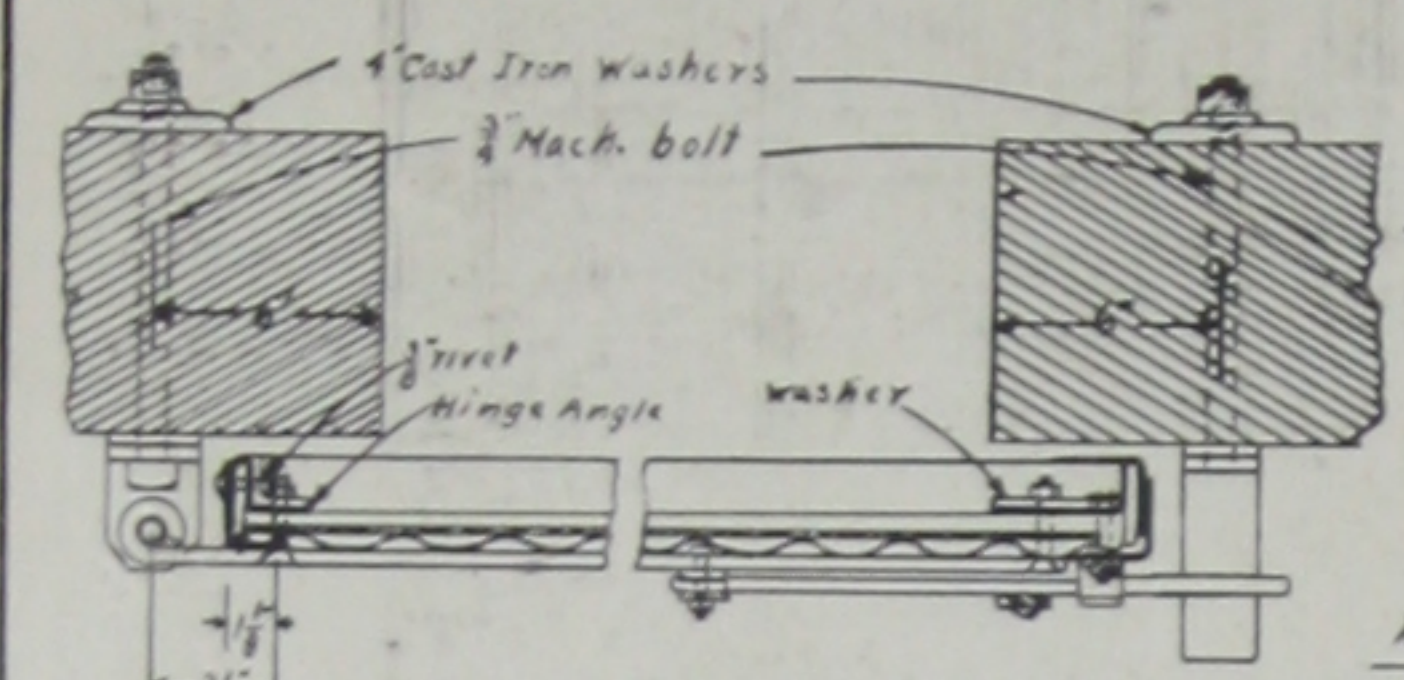
Above, Evans Almetl Single Sliding Fire Doors, Inclined Top, with flat track hardware, protecting arched top openings in one of the largest wire rope works in America.

At left, Garage of Holmes-Adkins Co., Omaha, Neb., in which both sides of openings are protected by Evans "Almetl" Single Sliding Inclined Top Fire Doors, equipped with 2-link flat track hardware.

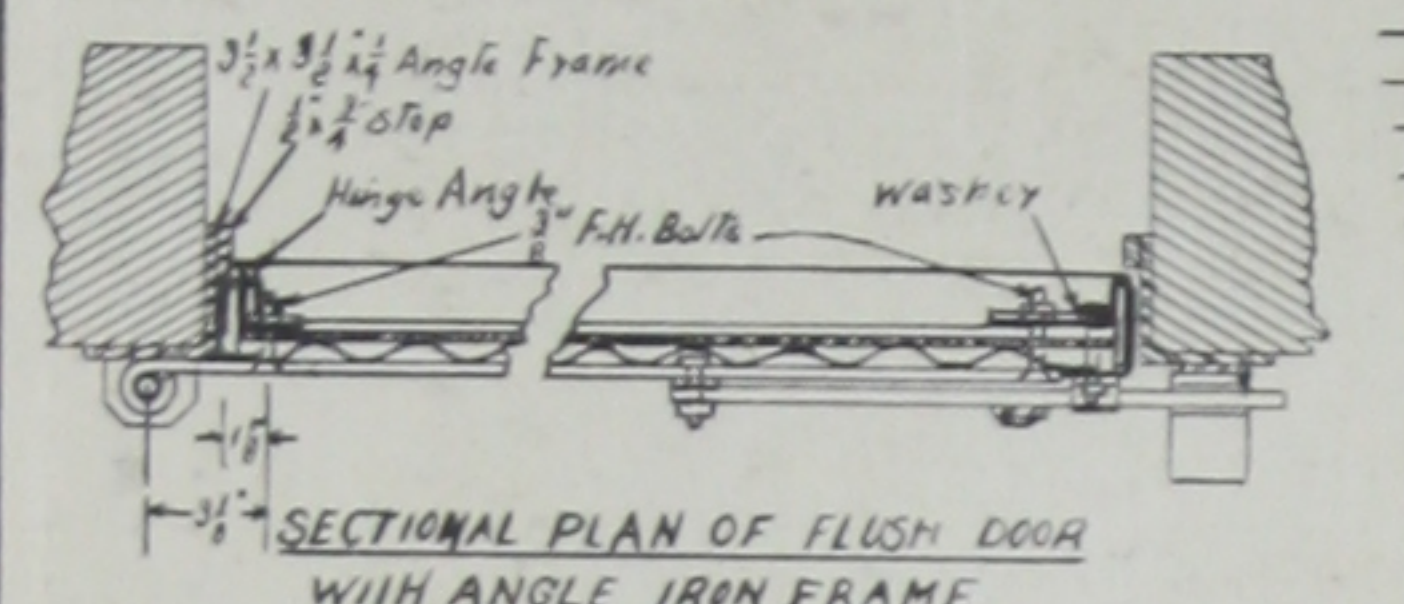
Bottom, Liggett & Myers Tobacco Co., Lexington, Ky. Both sides of all openings are protected with Evans "Almetl" Single Sliding Inclined Top Fire Doors, using 2-link round track hardware.



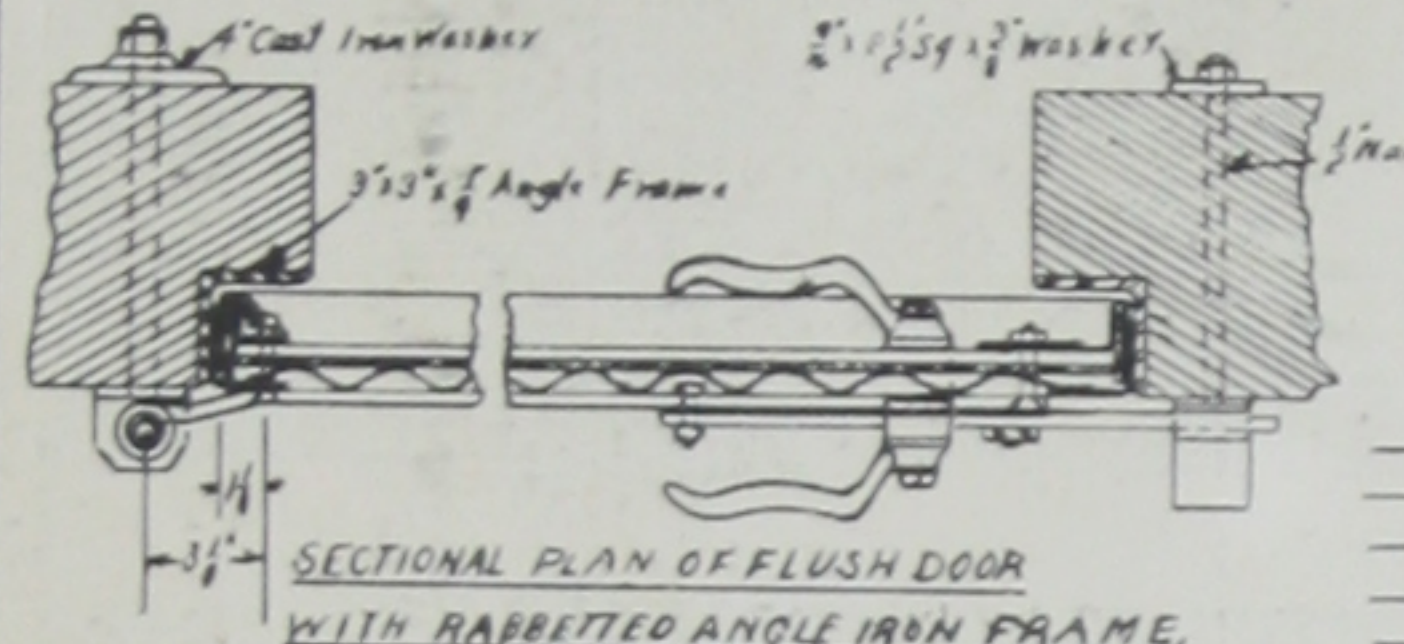




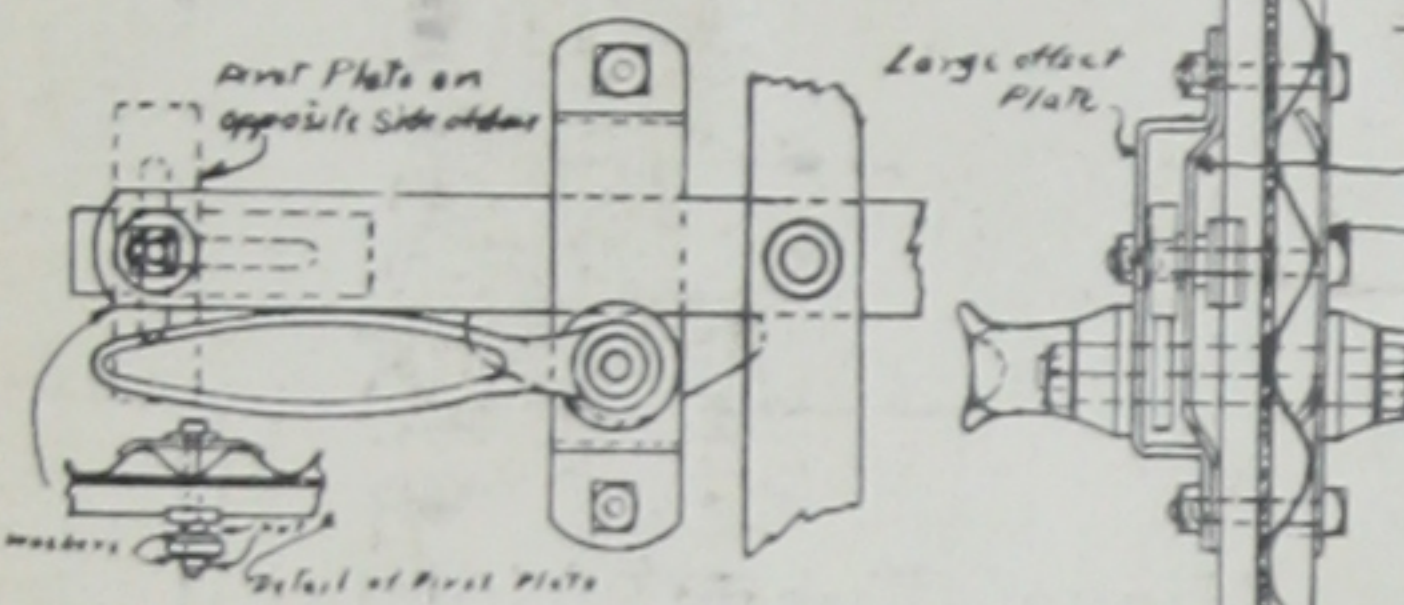
SECTIONAL PLAN OF LAP DOOR



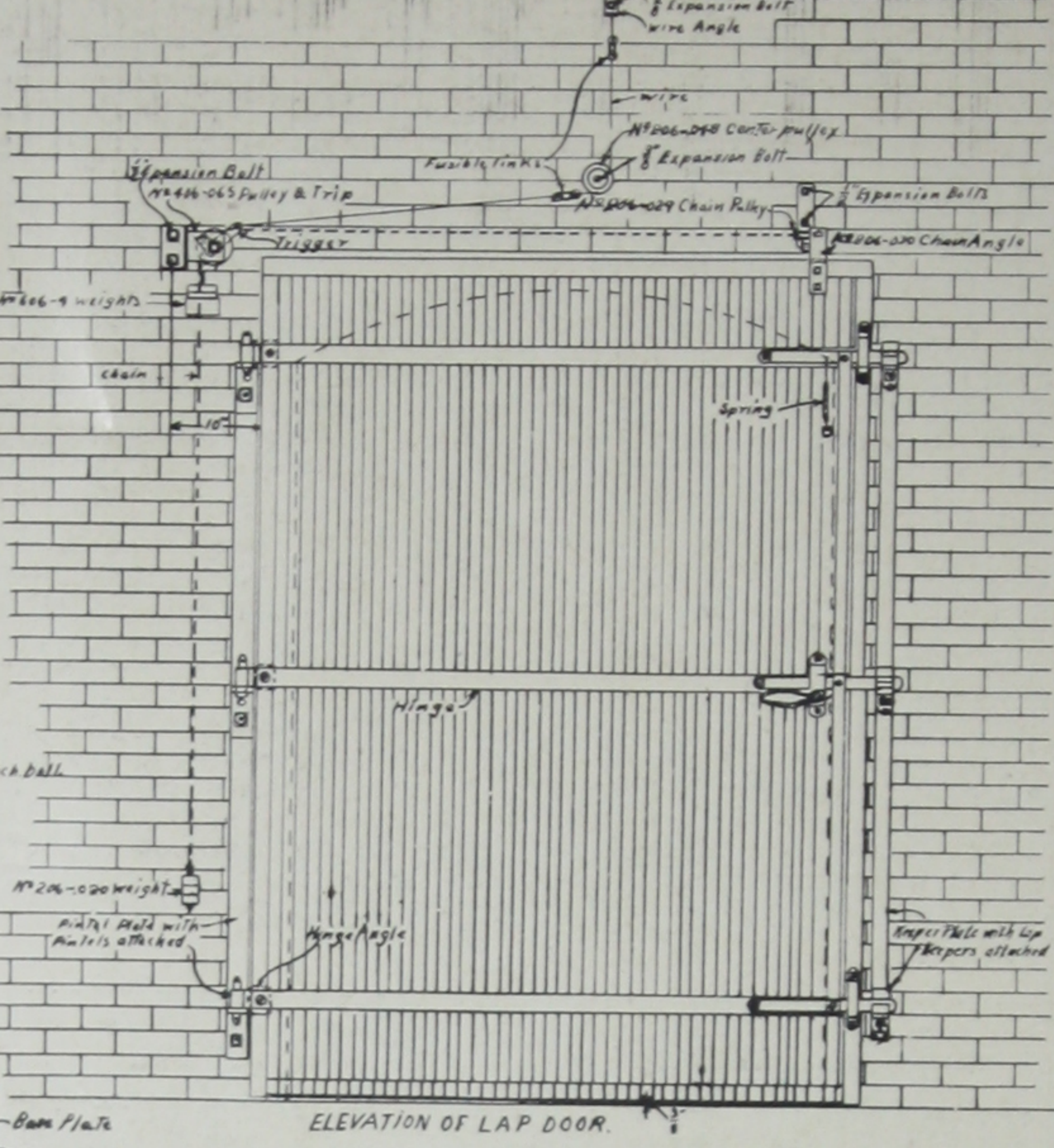
SECTIONAL PLAN OF FLUSH DOOR WITH ANGLE IRON FRAME



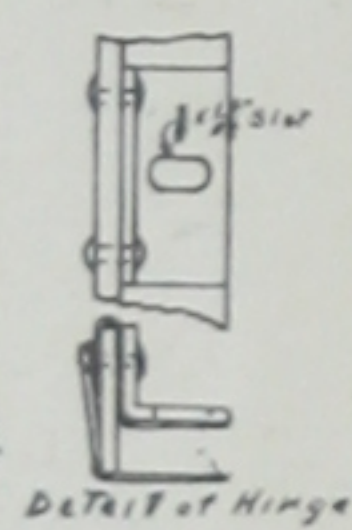
SECTIONAL PLAN OF FLUSH DOOR WITH RABBETED ANGLE IRON FRAME



DETAIL SHOWING APPLICATION OF CENTER LATCH BAR WHEN NUMBER OF LATCH BARS EXCEEDS NUMBER OF HINGES



ELEVATION OF LAP DOOR



DETAIL OF HINGE ANGLE

DIRECTIONS FOR MOUNTING

**Pintels.**— Pintels for lap and rabbeted flush doors are attached to wall plates and are bolted to the wall with 3/4" mach bolts extending thru pintel, wall plate & wall. Locate pintels so hinges will be equal distance from top & bottom of door. Center of pintel should be 2" from the edge of the door, not opening. Flush doors require 1/2" clearance between door and frame. Pintels for flush doors with angle iron frame do not require wall plate but are bolted to the frame with two 3/4" bolts.

**Hinges.**— Place the door in closed position with at least 3/4" blocking under door. Place hinges in pintels and mark bolt holes on doors, remove doors and drill holes for 3/4" bolts. Attach hinge angles to back side of doors with 3/4" rivets. The oval hole in hinge angle should be opposite bolt hole.

**Latch.**— Bolt pivot end of latch bars to the hinges as shown on the detail. Bolt hinges to door with 3/4" flat hd. bolts. Latch end of hinge should have large square washers under the nut on the back side of the door. When the number of latch bars are not equal to the number of hinges, the pivot end of the center latch bar is bolted directly to the door using the special pivot plates with long oval holes, on each side of the door, see detail in lower left hand corner. Small offset plates are bolted to the frame of the door to guide each latch bar excepting the one with which the operating handle is to be used. The large offset plate for the operating handle is used on the front of the door and the flat plate on the back of the door. The offset base plate is used beneath the large offset plate with the latch bar between the two plates. Use 3/4" bolts for all offset plates. Bolt spring to door with 3/4" bolt.

**Keepers.**— Keepers are attached to wall plates. Keepers for lap doors are bolted thru the wall with 3/4" mach bolts using 4" round cast washers on the opposite side of the wall. Keepers for rabbeted flush doors are bolted thru wall with 3/4" mach bolts and 2" square steel washers on the opposite side of the wall. Keepers for flush doors with angle iron frame, bolt directly to the frame with 3/4" bolts. Note, washers are not required when doors are used on both sides of wall.

**Chain Angle.**— Attach chain angle to the front of the door near top with 3/4" machine bolts as shown.

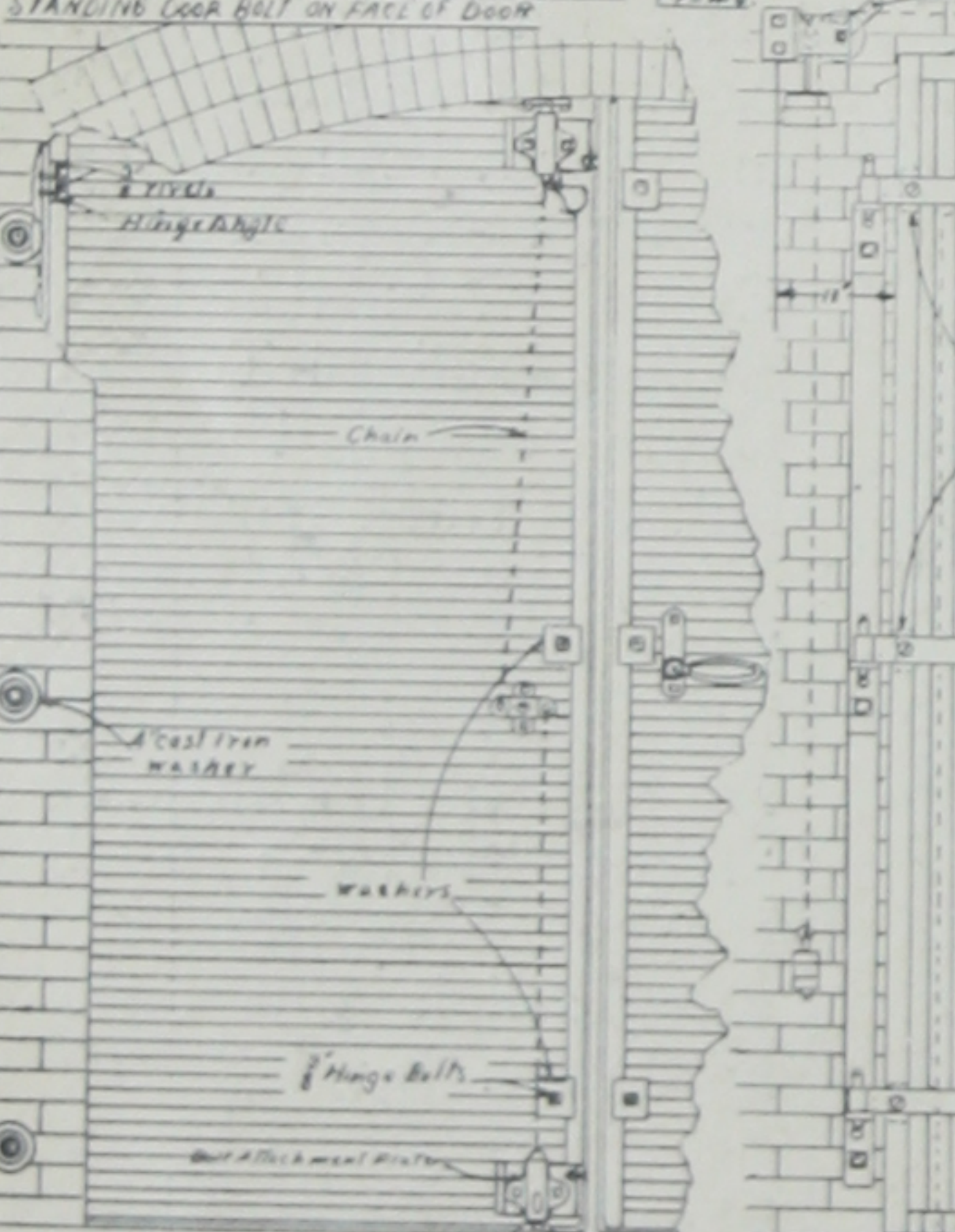
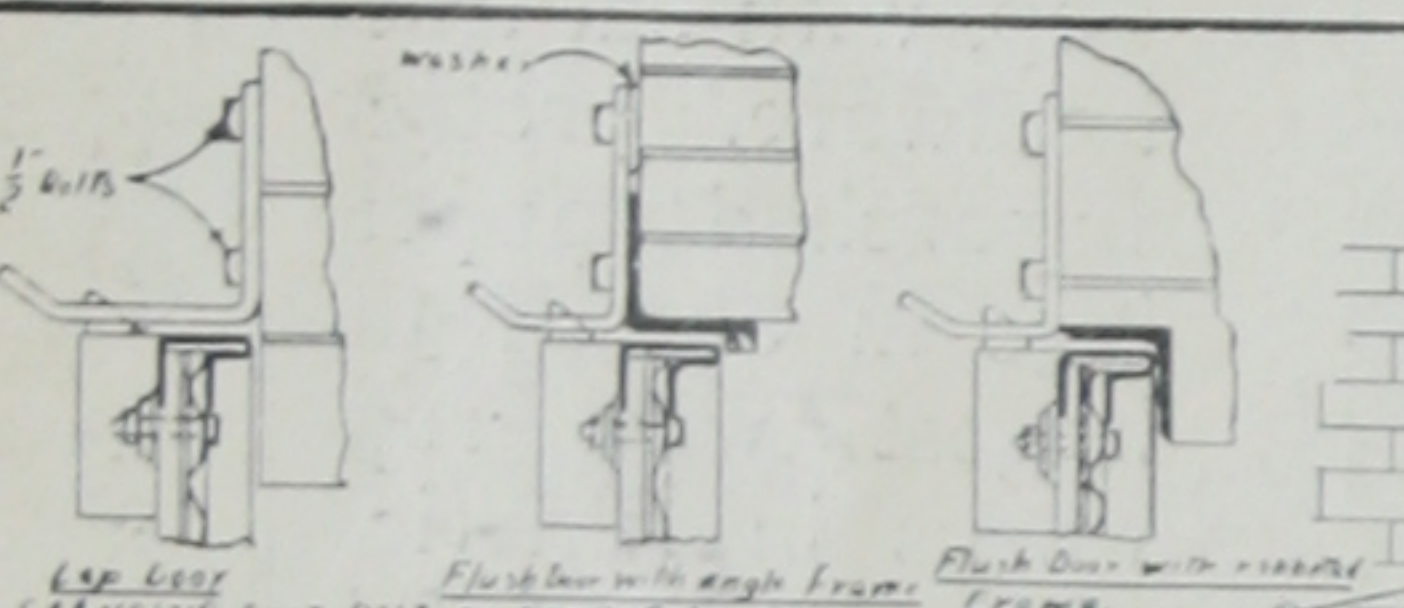
**Chain Pulleys.**— Attach N°206-029 chain pulley to wall above door with 3/4" expansion bolts in such position that groove in pulley will be in line with hole in chain angle to which chain is attached. Attach 406-046 pulley to the wall so top of groove is in line horizontally with groove of N°206-029 chain pulley. N°406-046 chain pulley bolt holes should be 10" from edge of door, use 3/4" expansion bolts.

**Flexible Link.**— Fasten N°206-043 center pulley to wall above door so that flexible link will be over center of opening. Attach wire to wall near ceiling with 3/4" expansion bolt. Fasten the wire to angle, pass around pulley and fasten to trigger in N°406-065 trigger. Draw wire so top of trigger will be horizontal.

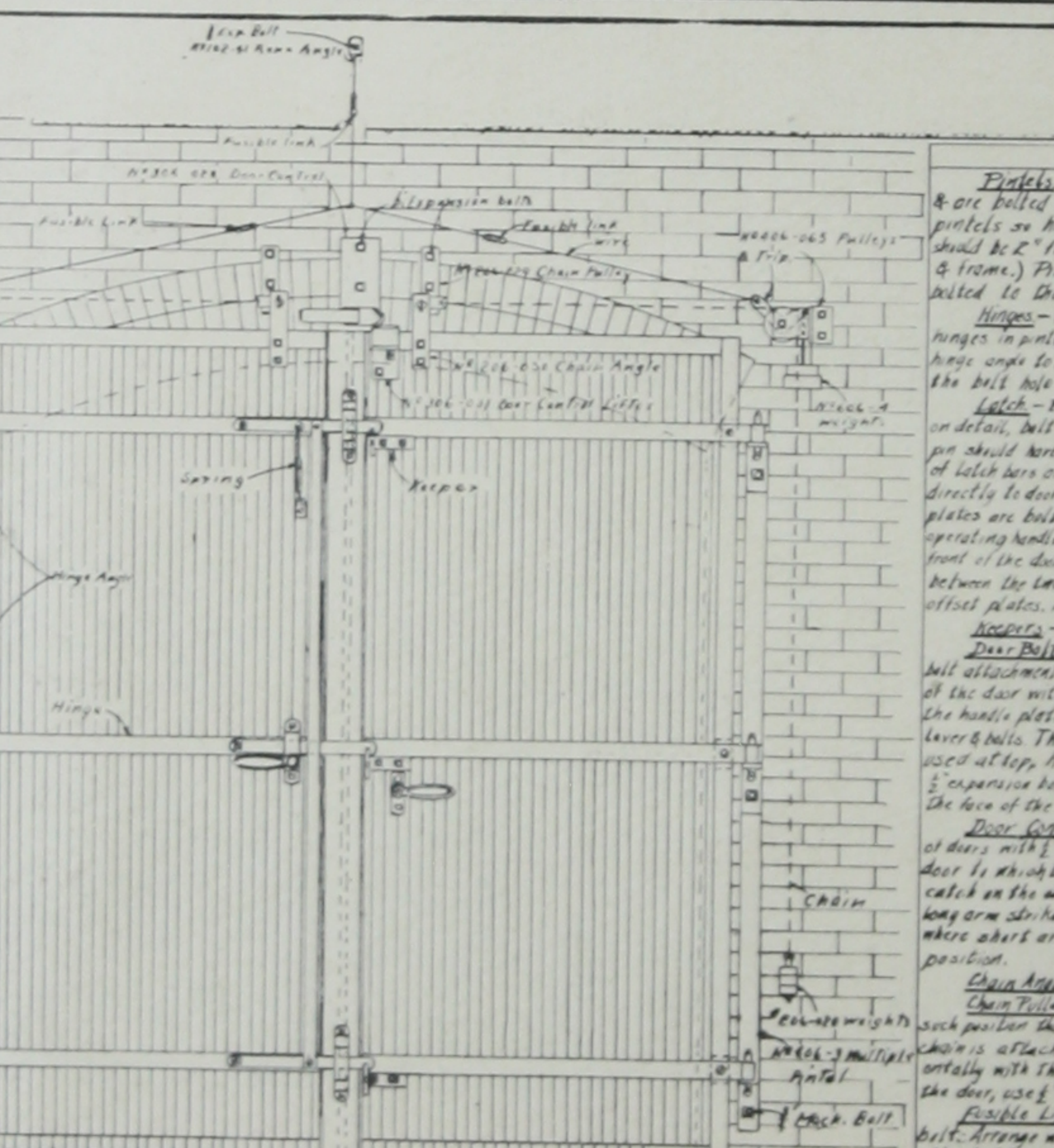
**Chain Weights.**— Hang N°606-4 extra weights on fork of trigger. Pass one end of chain up thru hole in weights, over where N°406-065 pulley, around groove of N°206-029 pulley & attach to hole in chain angle by securing a flexible ring in end of chain. Attach N°206-020 weights to opposite end of chain, which should be long enough to allow doors to swing open slightly past 45 degree angle only.

**Washers.**— All 3/4" mach bolts passing thru wall require 4" cast washers on opposite side of wall. Washers are not required when doors are used on both side of wall.

Erection Plan for Evans "Almet" Single Swinging Overlap Type Fire Doors, using M. & E. R-W No. 406 Hardware.



BACK ELEVATION OF DOOR



FRONT ELEVATION OF DOOR

DIRECTIONS FOR MOUNTING

**Pintels.**— Pintels for lap & rabbeted flush doors are attached to wall plates & are bolted to wall with 3/4" bolts extending thru pintel, wall plate & wall. Locate the pintels so hinges will be equal distance from top & bottom of doors, center of pintel should be 2" from top of door, not opening. Flush doors require 1/2" clearance between door & frame.) Pintels for flush door with angle iron frame do not require wall plate but are bolted to the frame with two 3/4" bolts.

**Hinges.**— Place doors in closed position with at least 3/4" blocking under door, place hinges in pintels & mark bolt holes on doors, remove doors & drill holes for 3/4" bolts, attach hinge angles to back side of door with 3/4" rivets, the oval hole in hinge angle should be opposite the bolt hole.

**Latch.**— Bolt pivot end of latch bar to the hinges for door which is to close last as shown on detail, bolt all the hinges to the doors with 3/4" flat head bolts. Latch end of hinge bar should have large square washers under the nut on the back side of the door when the number of latch bars are not equal to the number of hinges the pivot end of the center latch bar is bolted directly to door using the special pivot plates with long oval holes, see detail. Small offset plates are bolted to the frame of the door to guide each latch bar excepting the one with which operating handle is to be used. The large offset plate for the operating handle is used on the front of the door. The offset base plate is used beneath the large offset plate with the latch bar between the two plates. The flat plate is used on the back of the door. Use 3/4" bolts for all offset plates. Attach spring to the door with 3/4" bolt.

**Keepers.**— Attach keepers to door with 3/4" bolts as shown.

**Door Bolts.**— Attach top & bottom bolts to back side of opening door with 3/4" bolts. In all attachment plate between door & bolts, end of attachment plate should be bolted to the frame of the door with 3/4" flat hd. bolts. Attach handle to the order of door on the front side bolting the handle plates to the door with 3/4" bolts, chains should be connected to oval holes in handle lever & bolts. The bolt to which the small gravity weight is attached should always be used at top. Attach bottom keeper to sill with 3/4" h. bolts, attach top keeper to sill with 3/4" expansion bolts, which doors are used on both sides of wall the bolts should be attached to the face of the door, no attachment plates are required.

**Door Control.**— Attach door control to the wall over the center of opening & above top of door with 3/4" expansion bolts, test to see that long arm drops low enough to strike top of door & which latches are attached, short arm should not drop low enough as pointed end will catch on the other door. Pivot bumper shoe under side of top of door at the place where long arm strikes door. Bolt door control to face of standing door opposite pivot where short arm contacts with door & just high enough to lift arms into horizontal position.

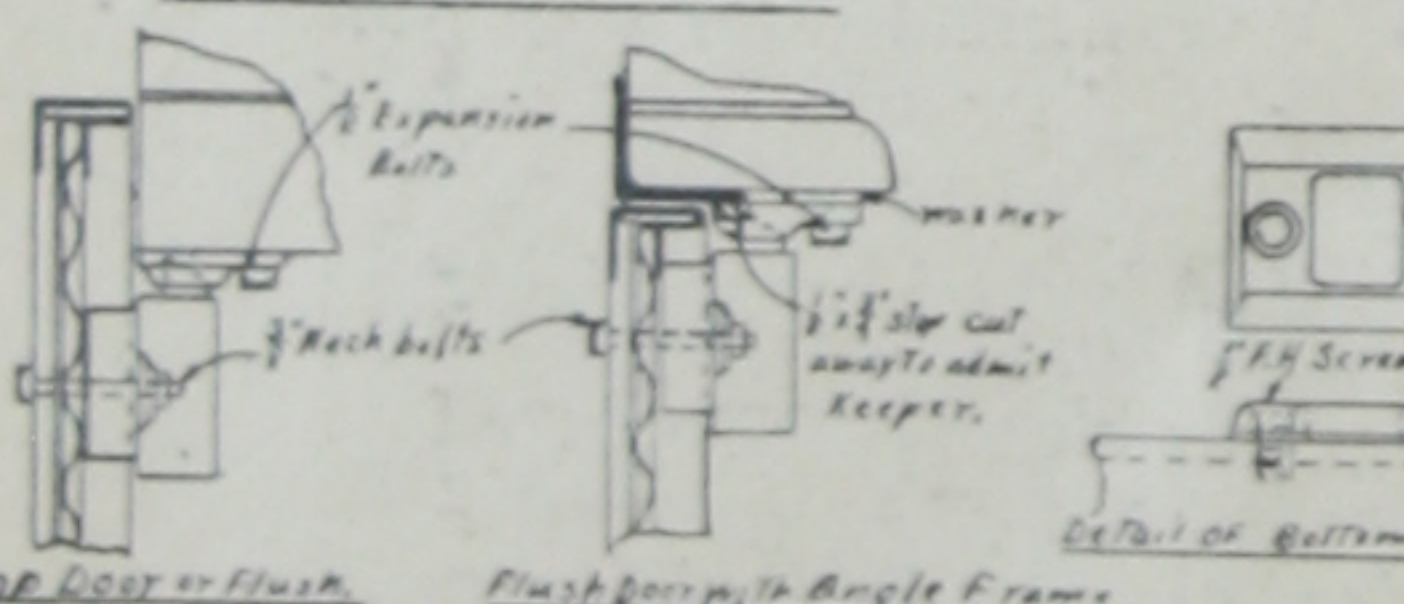
**Chain Angle.**— Attach chain angles to top of doors near the latch side with 3/4" bolts.

**Chain Pulleys.**— Attach N°206-029 chain pulleys to wall above doors with 3/4" expansion bolts in such position that the groove in the pulley will be in line with hole in chain angle. If chain is attached, attach N°406-046 pulleys to the wall so top of groove is in line horizontally with the groove of N°206-029 chain pulley, N°406-046 bolt holes should be 10" from the door, use 3/4" expansion bolts.

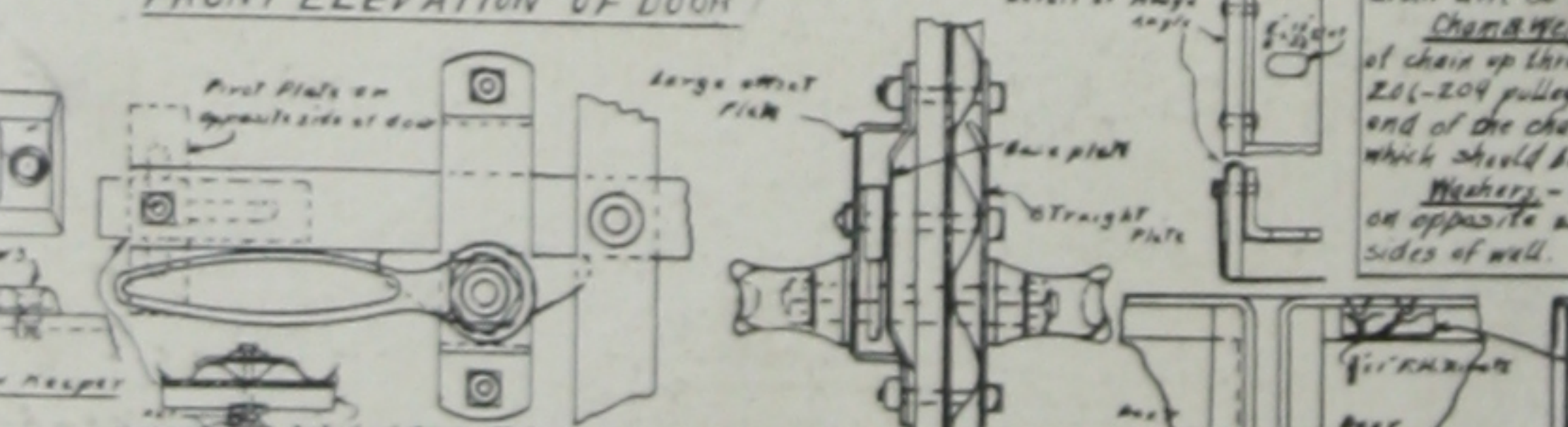
**Flexible Link.**— Attach wire angle to wall near ceiling ceiling with 3/4" expansion bolt. Attache wire as shown in elevation using flexible link. Upper end of wire is attached to wire angle. Lower ends of wire are attached to end of N°406-065 triggers, draw wire so top of trigger fork will be horizontal.

**Chain Weights.**— Hang N°606-4 extra weights on fork of trigger. Pass one end of chain up thru hole in weights, over where N°406-065 pulley, around groove of N°206-029 pulley & attach to hole in chain angle by securing a flexible ring in the end of the chain. Attach N°206-020 weights to the opposite end of the chain, which should be long enough to allow doors to swing open slightly past 45 degree angle only.

**Washers.**— All 3/4" machine bolts passing thru wall require 4" cast washers on opposite side of wall. Washers are not required when doors are used on both sides of wall.



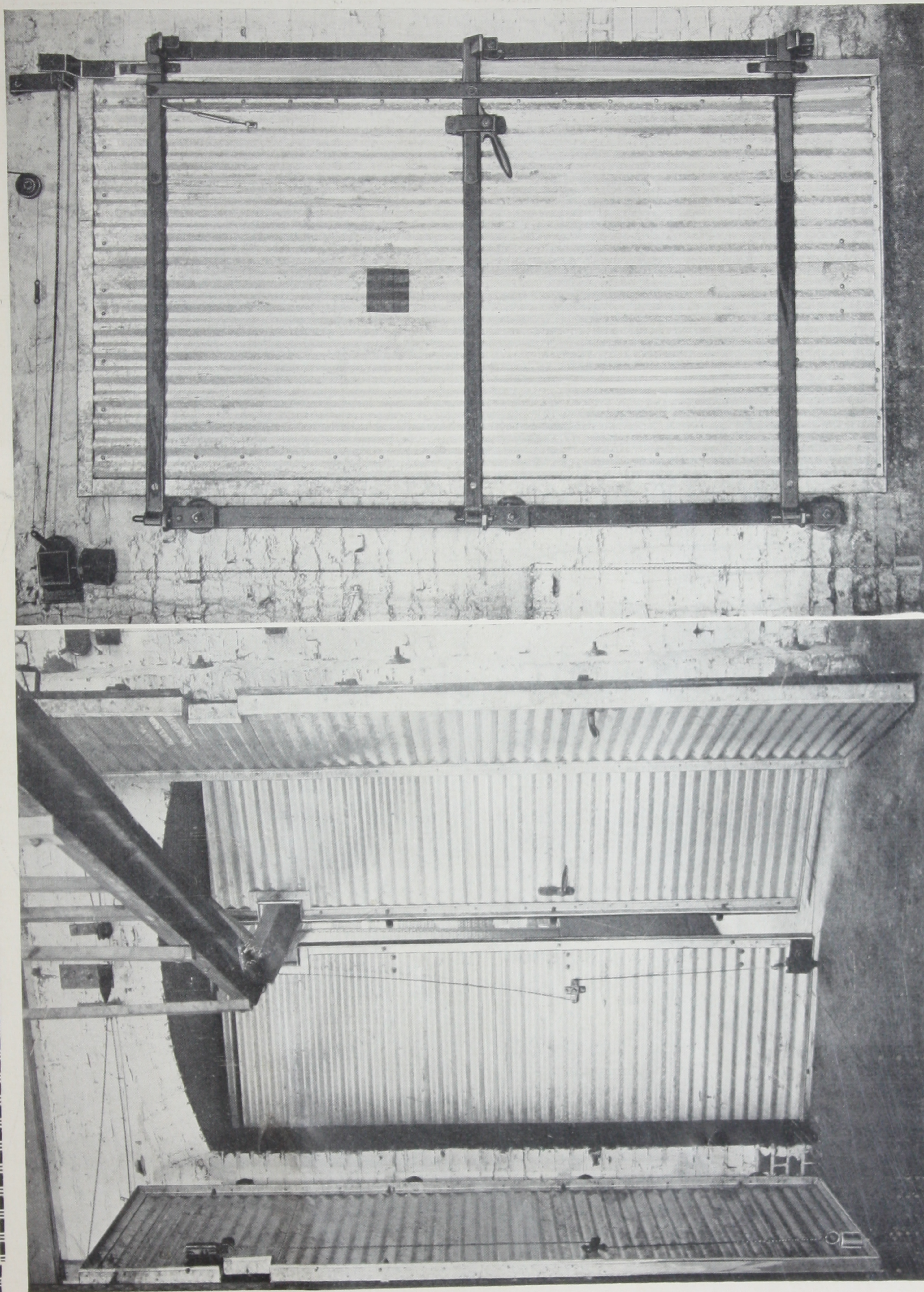
LAP DOOR STANDING DOOR BOLT ON BACK OF DOOR



DETAIL SHOWING APPLICATION OF CENTER LATCH BAR WHEN NUMBER OF LATCH BARS EXCEEDS NUMBER OF HINGES

Erection Plan for Evans "Almet" Double Swinging Overlap Type Fire Door —using M. & E. R-W No. 506 Hardware.

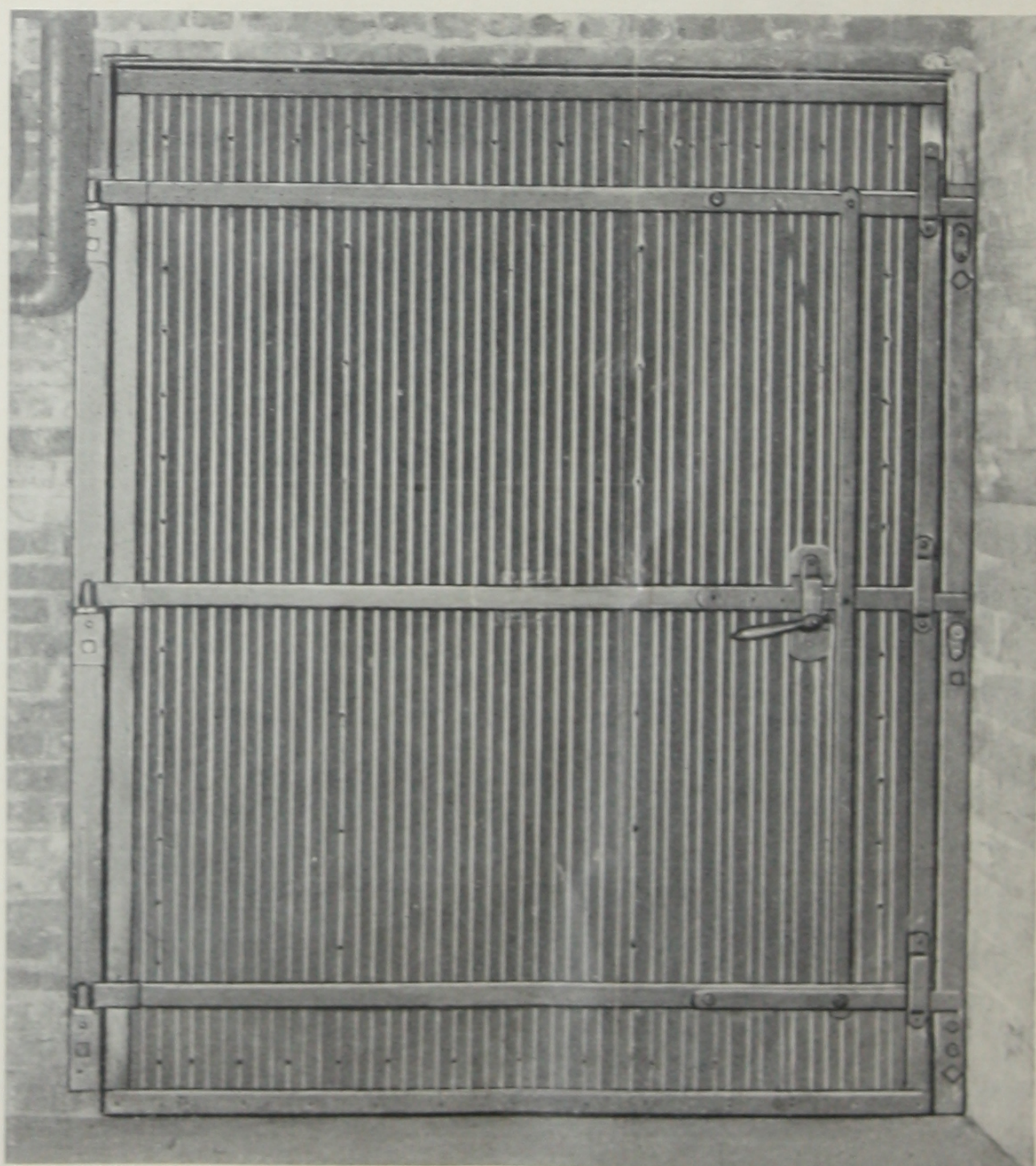
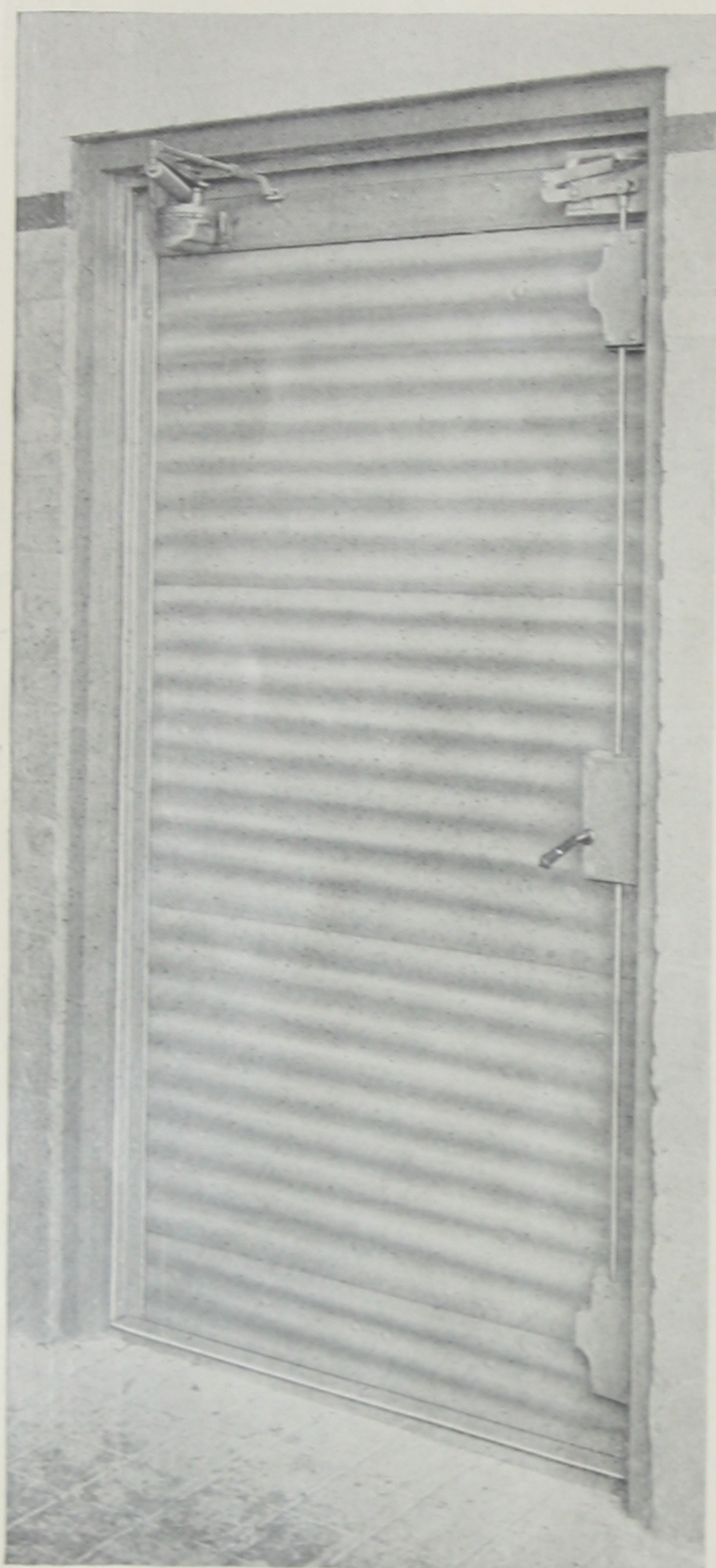




Two views in the plant of W. G. Clore Mfg. Co., Washington, Ind. At right, Evans "Almetl" Single Swinging Fire Door. At left, Evans "Almetl" Double Swinging Fire Doors, Overlap Type, protecting both sides of arched top opening. Note how doors are recessed to provide for overhead trolley track.

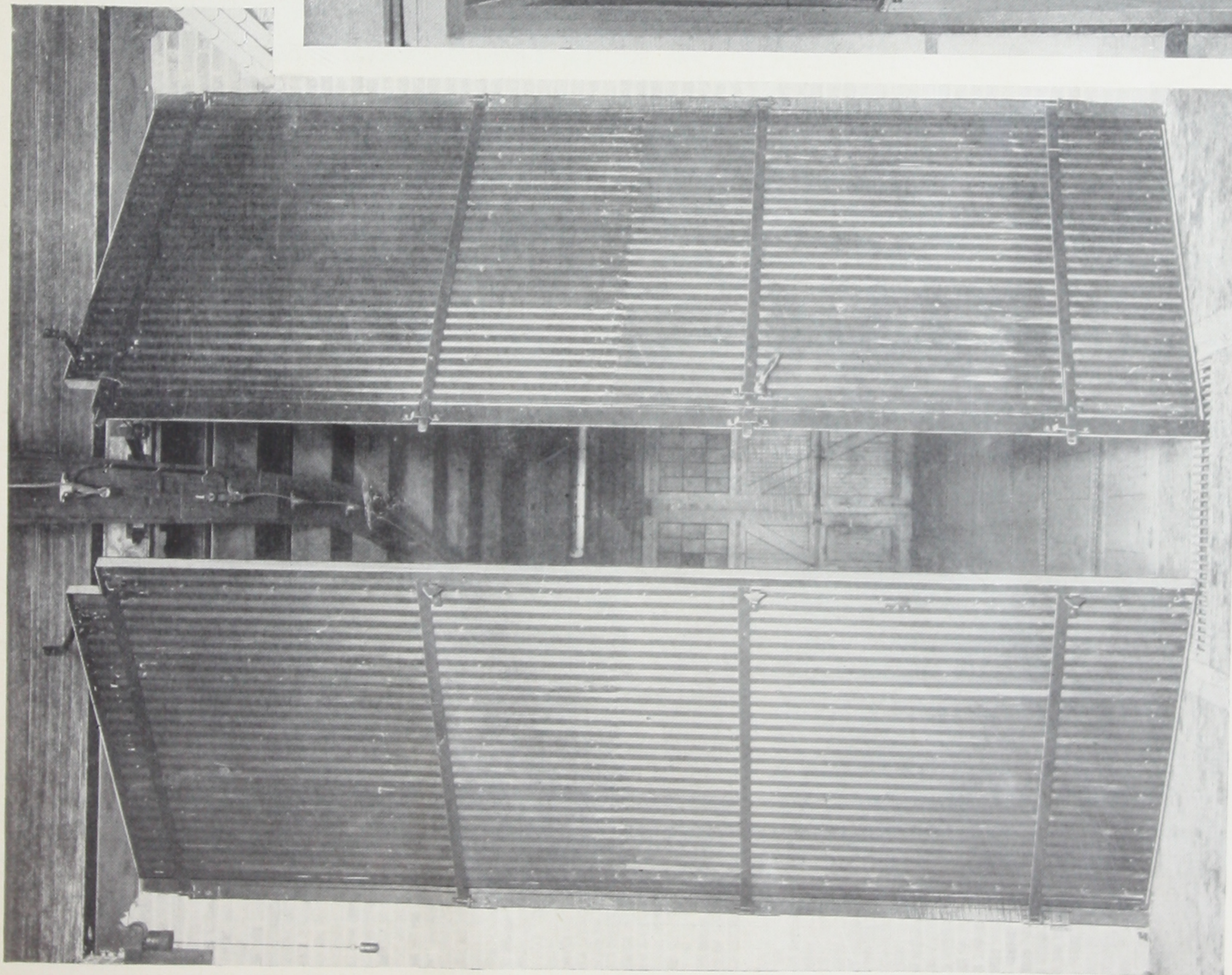
*NOTE.—Evans "Almetl" Doors are rigid in plane—and do not bend transversely and hit wall in closing.*





At top, an extra hazardous risk—the woolen rag factory of S. Rainitser Co., Inc., New York. Evans "Almetl" Single Sliding Inclined Fire Doors, with flat track hardware. Center, Evans "Almetl" Single Swinging Fire Door, Flush Type, in Cushman Garage, New York. Note door check and patent lock. Bottom, Single Swinging Evans "Almetl" Fire Door, Flush Type, in rabbeted angle frame, with non-automatic hardware, as used by National Cold Storage Warehouse Co., Brooklyn, N. Y.

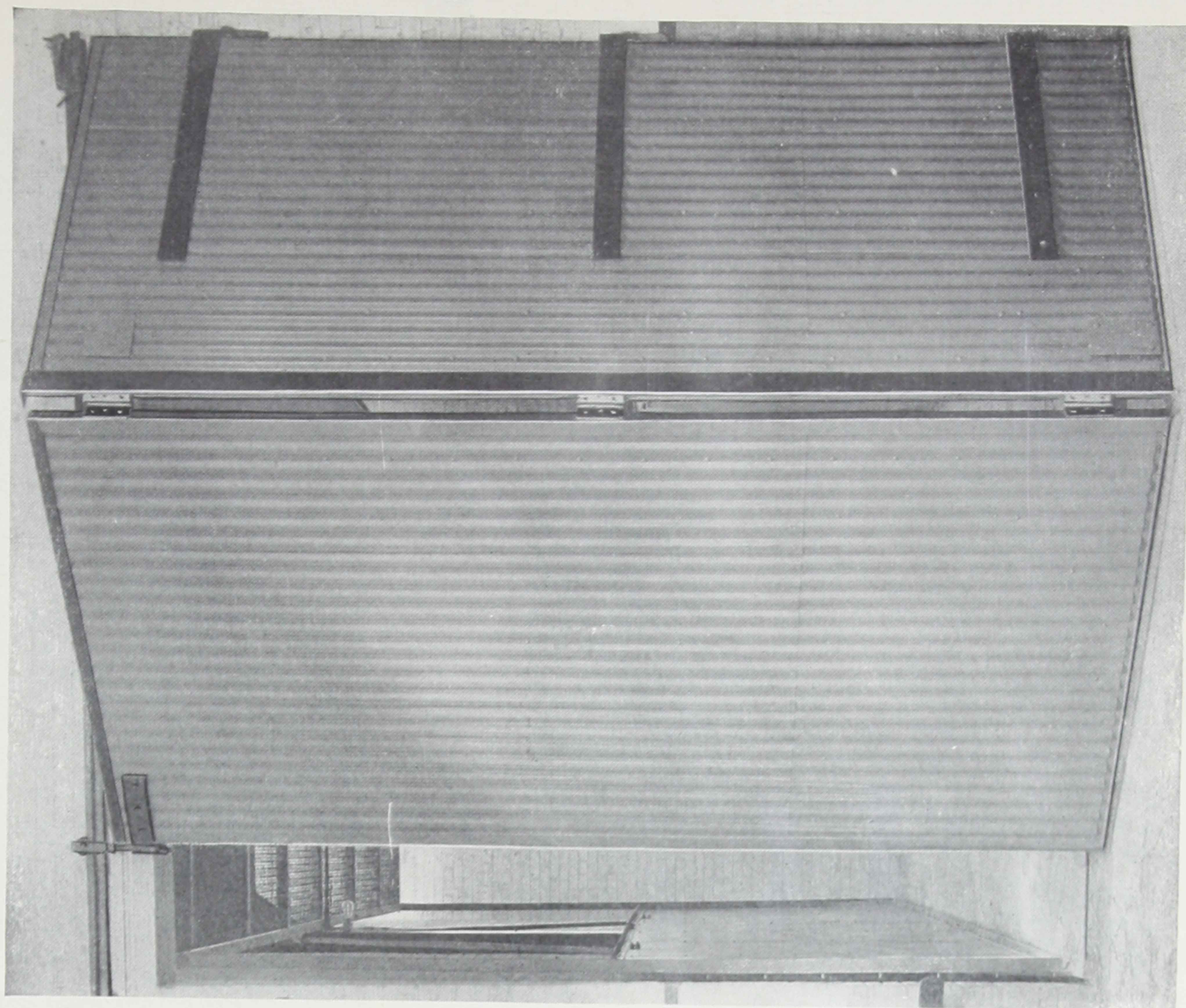




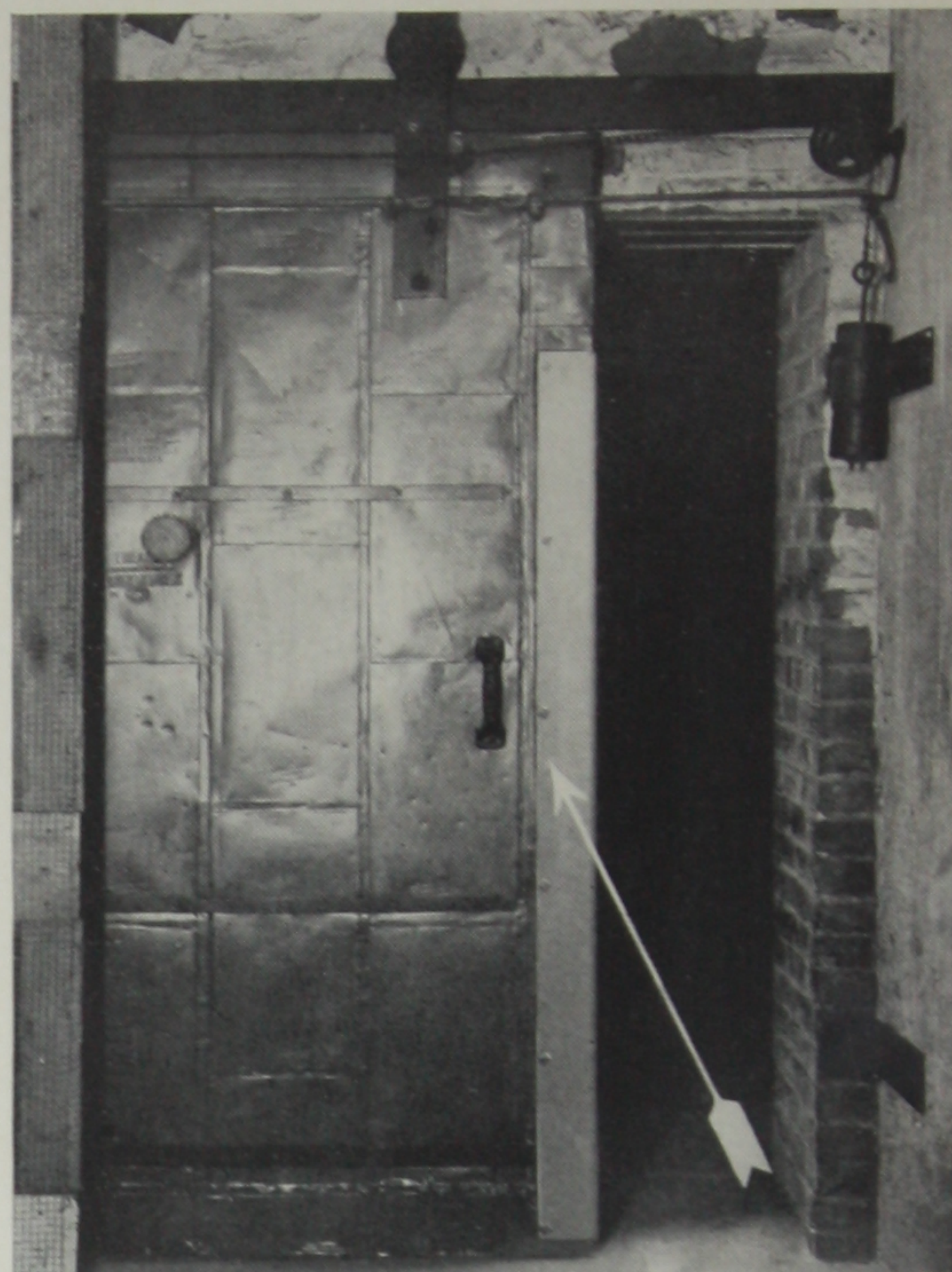
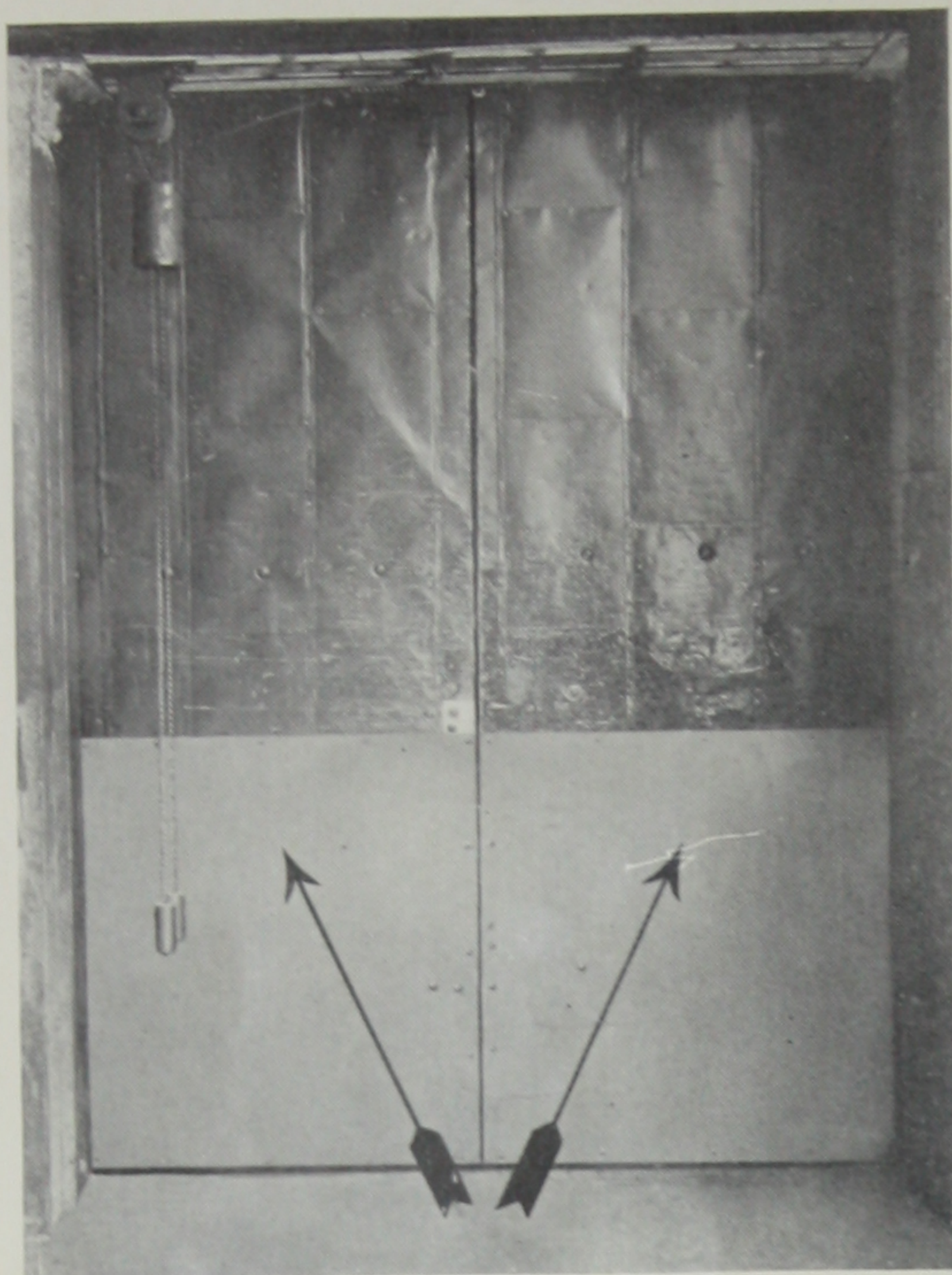
At right, Evans "Almetl" Sliding Folding Fire Doors, installed in Cushman Garage and Stable, Bronx, New York.

NOTE.—Evans "Almetl" Doors are rigid in plane—and do not bend transversely and are indestructible in use.

At left, Evans "Almetl" Double Swinging Fire Doors, Overlap Type, recessed for overhead wiring, installed in carpenter shop of Detroit Electric Railway Co., Detroit, Mich. Although opening is very large, viz., 12 feet six inches wide by 16 feet high, the doors operate with remarkable efficiency and ease.







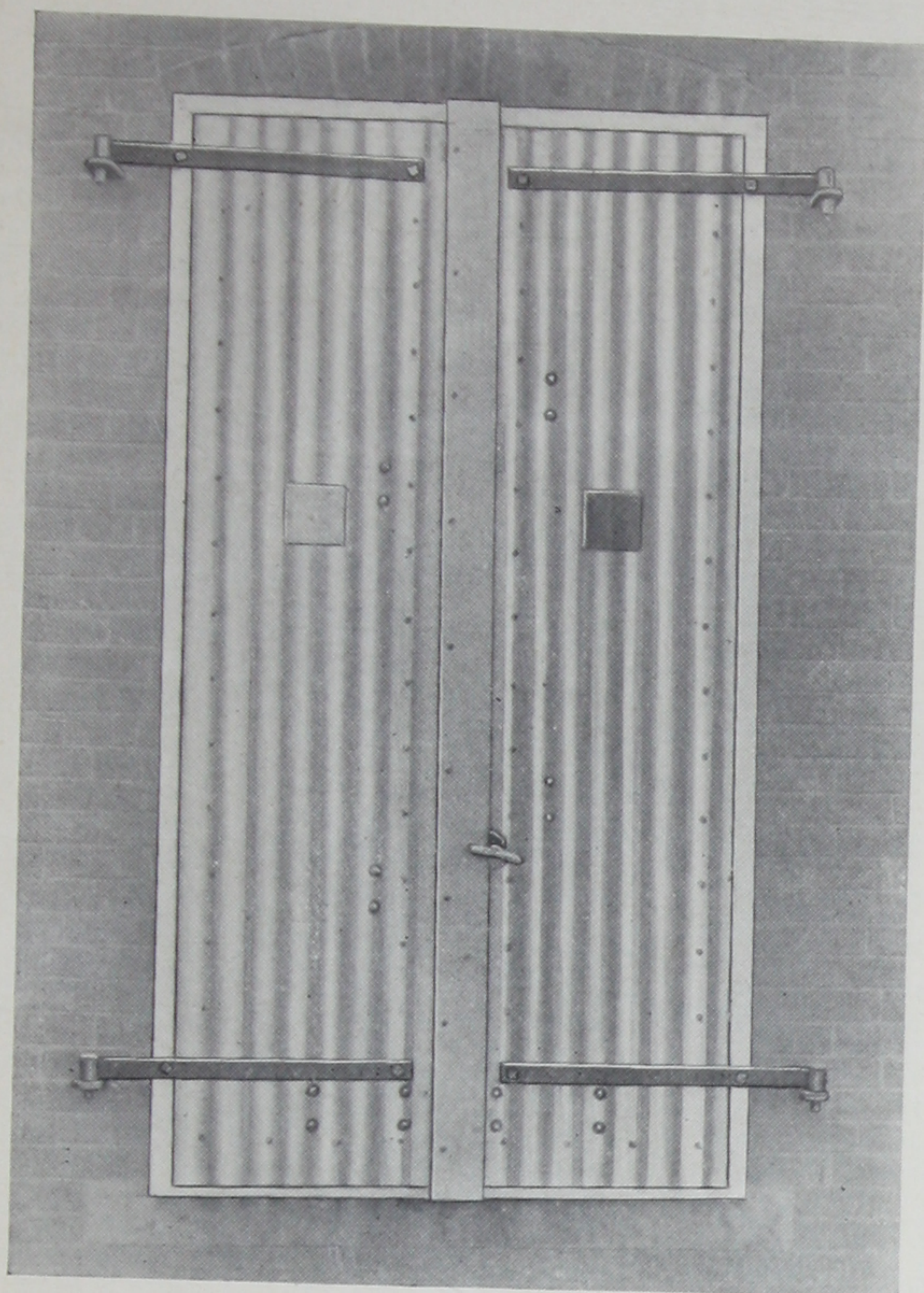
The four pictures on this page clearly illustrate some of the numerous defects of tin-clad fire doors. The upper left-hand view shows replacement of damaged tin at bottom of doors, by heavy steel plates. Upper right-hand picture shows heavy steel binder put on to repair damaged edge of door. Lower left-hand picture is a view of a non-standard tin-clad fire door that was completely destroyed by spontaneous internal combustion. Lower right-hand picture shows a long series of tin-clad doors. Note badly buckled appearance of envelope or tin covering on these doors.

**Don't make a mistake and buy *this* kind of door**

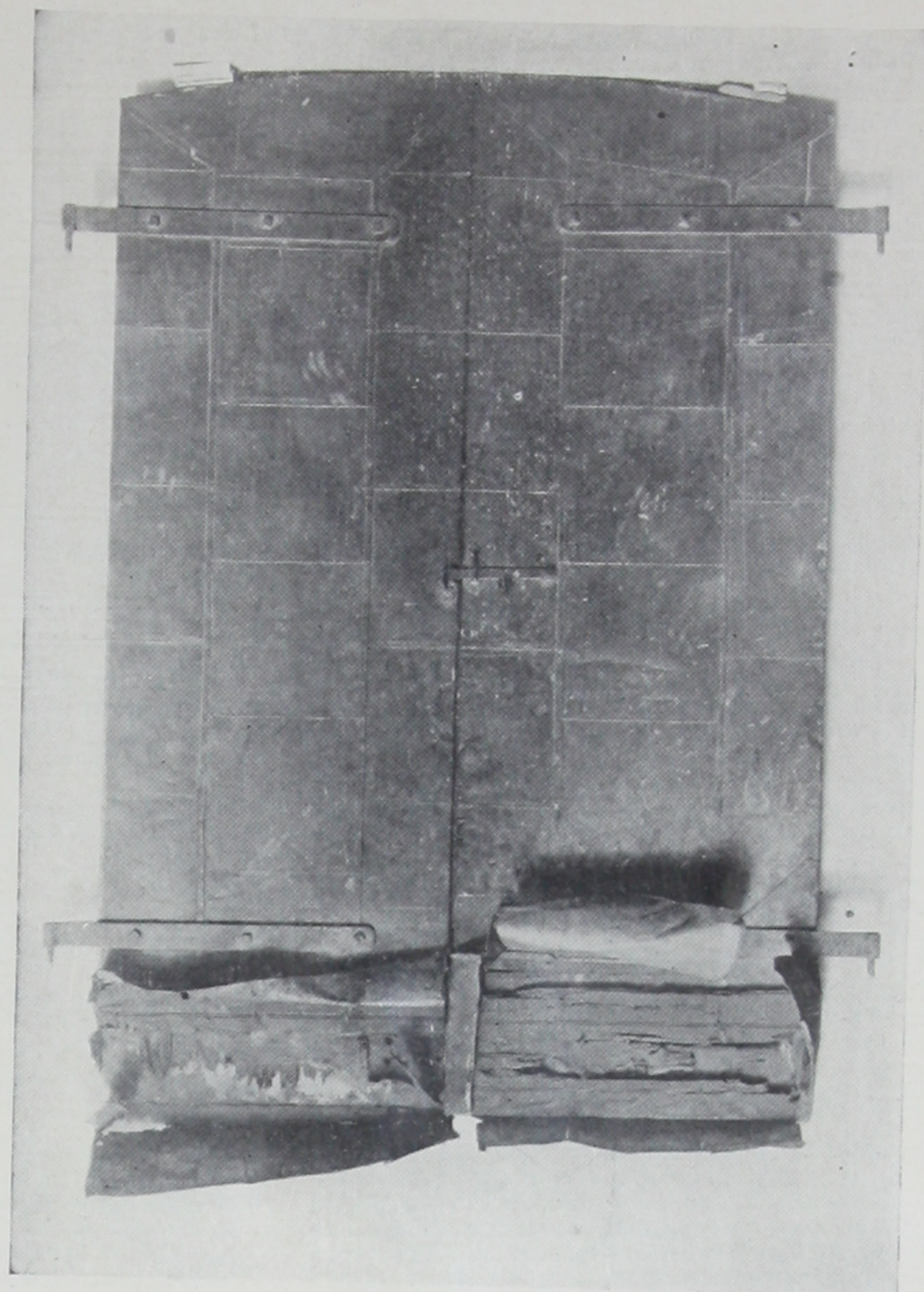


NOTE.—Evans "Almetl" Doors do not rust and are indestructible in use!





Evans "Almetl" Double Swinging Fire Shutters in closed position. Note the Astragal strip in centre



View of a pair of Tin-Clad Fire Shutters that were badly affected by dry rot

## Evans "Almetl" Fire Shutters

(Patent Pending)

### Lightest and Best

The Evans "Almetl" Fire Shutters are fully approved by the Underwriters' Laboratories, Chicago, Ill., and the Factory Mutual Laboratories, Boston, Mass.

The construction of our Fire Shutters is designed along the lines of our Fire Doors, but they are not as wide along the edges as our doors, so as to make them suitable for the purpose intended. The reduction in width of frame lightens weight, but not strength.

In rigidity, strength, durability, ease of operation, simplicity of erection and minimum expense for maintenance, they are without an equal anywhere. We can supply fully approved hardware. Full insurance rebates are allowed for proper installation of these Shutters.

In making inquiries for Evans "Almetl" Fire Shutters, please observe in general the details that we ask for in respect to our Doors, and be sure to state whether the Shutters are for square or arch top openings, whether they are single or double, and whether flush or overlap type.

**All buildings that can be reached by a fire from nearby or adjoining buildings should be equipped with our Evans "Almetl" Fire Shutters, as they constitute the best, and therefore the least expensive protection, that can be procured for the purpose.**

*NOTE.—Evans "Almetl" Shutters are rigid in plane—do not bend transversely and are indestructible in use.*



# SMALL, PARTIAL LIST OF CONCERNS NOW USING EVANS "ALMETL" FIRE DOORS (OR SHUTTERS) IN THEIR PROPERTIES

## ARKANSAS

Kaucher Hodges & Co. Little Rock

## COLORADO

Wm. Volker & Co. Denver  
Colorado Tire & Rubber Co. Denver  
La Junta Plumbing & Heating Co. La Junta  
J. C. Robinson Seed Co. Rocky Ford  
Charles Emerick Trinidad

## CONNECTICUT

N. Y., New Haven & Hart. R. Co. Danbury  
Hartford Electric Light Co. Hartford  
Rockwell Drake Corporation Plainville  
Scoville Mfg. Co. Waterbury

## DELAWARE

American Vulcanized Fibre Co. Newark  
Kennard & Co. Wilmington

## FLORIDA

H. N. Salton Jacksonville

## GEORGIA

Duane Chair Co. Dalton

## ILLINOIS

Joseph Knapp Belleville  
Otto Elliott Cairo  
Arnold Company Chicago  
Western Electric Co. Chicago  
John Ramcke & Son Chicago  
George B. Swift & Co. Chicago  
Hawkeye Compound Co. Chicago  
Dryden Rubber Co. Chicago  
Standard Paint Co. Chicago Heights  
Wm. C. F. Kuhne Muncie  
Naperville Lounge Co. Naperville  
Illinois Central R. R. Co. Palestine  
Peoria Malting Co. Peoria

## INDIANA

Rubber Regenerating Co. Mishawaka  
John Obrecht Sons Mfg. Co. Tell City  
Tell City Desk Co. Tell City  
Grasselli Chemical Co. Terre Haute  
Wm. H. Clore Mfg. Co. Washington

## IOWA

Carstens Brothers Ackley  
A. J. Bridges Bedford  
J. J. Peterson Floyd  
T. F. McDonnell & Co. Greene  
Lauritzen Construction Co. Hazleton  
Ottumwa Supply & Construction Co. Leon  
Iowa Hardware Mut. Ins. Bldg. Mason City  
Theodore Stark & Co. New Hampton  
G. L. Smith Shell Rock  
John G. Miller Urbana  
Hansen & Hadley Waterloo  
Overland Garage Co. Waterloo  
Peterson Brothers, Mortuary Waterloo  
Wartburg Publishing Co. Waverly  
Waverly Lumber Co. Waverly  
G. L. Smith Winthrop

## KANSAS

Emporia Ice & Cold Storage Co. Emporia  
E. T. Fay Harris  
Brownfield-Sifters Candy Co. Iola  
Kaw Valley Cannery Co. Lawrence  
Lawrence Paper Mfg. Co. Lawrence  
R. L. Miller Mayette  
J. W. Prince Parsons  
Steel Fixture Mfg. Co. Topeka  
J. H. Mitchell & Son Wellington  
Western Iron & Foundry Co. Wichita

## KENTUCKY

E. E. Campbell Arlington  
Grain Elevator Co. Lexington  
Leader Building Lexington  
Liggett & Meyers Tobacco Co. Lexington  
L. W. Hancock Co. Louisville  
J. M. Guthrie Scottsville

## MARYLAND

Rasin Monumental Co. Baltimore  
Baugh Chemical Co. Canton

## MASSACHUSETTS

Arlington Mills Lawrence  
Worcester Electric Light Co. Worcester

## MICHIGAN

Detroit Ship Building Co. Detroit  
Detroit United Railways Co. Detroit  
Garfield Exchange Detroit  
Great Lakes Engineering Co. Detroit  
Hemlock Exchange Detroit  
Michigan State Telephone Co. Detroit  
Standart Brothers Detroit  
Studebaker Auto Corporation Detroit  
W. E. Wood Co. Flint  
Brown & Schler Grand Rapids  
Grand Rapids Railway Co. Grand Rapids  
Imperial Furniture Co. Grand Rapids  
Nichols & Cox Co. Grand Rapids  
Wilson-Wiggins Co. Grand Rapids  
J. Herman & Son Ionia

Capital Auto Co. Lansing  
Capital State Bank Building Lansing  
Wolverine Auto Co. Lansing

## MINNESOTA

E. A. Siddall Wells  
H. W. Lea Winona  
New Winona Mfg. Co. Winona

## MISSISSIPPI

Farmers' Warehouse Co. Oxford

## MISSOURI

Ford Motor Co. Kansas City  
Maloney Electric Co. St. Louis  
International Shoe Co. St. Louis  
Century Electric Co. St. Louis  
Henry Millitzer St. Louis  
Saline Electric Co. St. Louis  
Theatre Building Springfield  
Dr. J. A. Crockett Stanbury  
Elk Hotel Building Trenton  
Langston Mercantile Co. West Plains

## NEBRASKA

G. O. Fairchild Bertrand  
G. O. Rains Beatrice  
Cushman Motor Works Lincoln  
Lincoln Telephone & Telegraph Co. Lincoln  
Holmes-Adkins Co. Omaha

## NEW JERSEY

Farr & Bailey Mfg. Co. Camden  
Strandwitz & Scott Camden  
American Can Co. Edgewater  
Theodore F. Baulig Hammonton  
Bound Brook Oil-Less Co. Lincoln  
Millville Mfg. Co. Millville  
Mardon, Orth & Hastings Co. Newark  
Thomas F. Farrell Newton  
Botany Worsted Mills Passaic  
A. C. Thompson Auto Co. Plainfield  
Matthews Construction Co. Princeton  
John A. Roebbing's Sons Co. Trenton  
Fitzgibbon & Crisp Co. Trenton

## NEW MEXICO

Gross-Kelly Co. Albuquerque  
Eubank & Dibblell Albuquerque

## NEW YORK

Binghamton Lounge Co. Binghamton  
E. B. Rich Binghamton  
Kroehler Mfg. Co. Binghamton  
National Aniline & Chemical Co. Brooklyn  
American Mfg. Co. Brooklyn  
National Cold Storage Co. Brooklyn  
Seacey Brothers Brooklyn  
Pratt & Leitchworth Co. Buffalo  
Dolgeville Felt Shoe Co. Dolgeville  
New York Central R. R. Co. Gardenville  
Putnam Terminal High Bridge  
Cushman Bakery Building New York City  
Mt. Vernon Telephone Sta. New York City  
Standard Paint Co. New York City  
S. Rawitser Co. New York City  
Certainteed Products Co. Niagara Falls  
Allen-Herschel Co. No. Tonawanda  
Overland Syracuse Co. Syracuse  
Van Zandt, Jacobs & Co. Troy

## NORTH CAROLINA

Va-Carolina Chemical Co. Charlotte  
Kerr Bleaching & Finishing Co. Concord  
Imperial Tobacco Co. Durham  
Robeson Mfg. Co. Lumberton  
Ledbetter Mfg. Co. Leah  
R. C. Lindsay Co. Page  
Paola Cotton Mill Statesville

## NORTH DAKOTA

Baldwin Flour Mill Casselton  
Gladstone Milling Co. Gladstone

## OHIO

The Firestone Tire & Rubber Co. Akron  
B. F. Goodrich Co. Akron  
Park School Cambridge  
The Bonnet Co. Canton  
M. Schachne & Sons Chillicothe  
Central Annex School Cleveland  
Ferro Concrete Construction Co. Cincinnati  
Conneaut Leather Co. Conneaut  
Conneaut School Board Conneaut  
Culp Block Conneaut  
Dicks-Pontius Building Dayton  
Sam Ahlert & Brother Utica

## OKLAHOMA

C. C. Van Tine Bartlesville  
Caddo Construction Co. Boynton  
Manhattan Construction Co. Council Hill  
Commonwealth Cotton Oil Co. Cushing  
H. E. McCart Durant  
Griffin Grocery Co. McAlester  
Russell Hardware Co. McAlester  
William Lowe Okmulgee

## NEW JERSEY

Electrical Alloy Co. Morristown

## THE PANAMA CANAL

For the U. S. Army Ordnance Depot,  
Corozal, Canal Zone

## PENNSYLVANIA

Lehigh Portland Cement Co. Allentown  
American Bronze Co. Berwyn  
Barger, Baine & Munn, Inc. Bloomsburg  
Standard Steel Works Co. Burnham  
Weisenstein Brothers Butler  
Charleroi Iron Works Charleroi  
W. S. Barstow & Co. Easton  
Pennsylvania Utilities Co. Easton  
Asbestos Protected Metal Co. Economy  
Acme Wagon Works Emigsville  
Schuylkill Railway Co. Girardville  
Pennsylvania R. R. Co. Harrisburg  
Henry Mininger Hatfield  
The Hamilton Watch Co. Lancaster  
Krupp Foundry Co. Lansdale  
Atlantic Refining Co. Philadelphia  
Harrison Brothers & Co. Philadelphia  
McCaffrey File Co. Philadelphia  
Edward C. Budd Mfg. Co. Philadelphia  
Jessup & Moore Paper Co. Philadelphia  
Keystone Spinning Mills Philadelphia  
Northern Liberties Gas Co. Philadelphia  
Northeast Stor. Warehouse Co. Philadelphia  
Phila. & Reading R. Co. Philadelphia  
H. C. Rea Building Philadelphia  
Roberts & Mander Stove Co. Philadelphia  
Schaum & Uhlinger Co. Philadelphia  
Sun Shipbuilding Co. Philadelphia  
Taubel Brothers Philadelphia  
The Bell Co. Warehouse Philadelphia  
D. B. Martin Co. Philadelphia  
Manufacturing Co. of America Philadelphia  
Henry F. Michell Co. Philadelphia  
India Refining Co. Philadelphia  
Concrete Construction Co. Philadelphia  
Pennsylvania Railroad Co. Philadelphia  
Barrett Mfg. Co. Philadelphia  
Frankford, Tacony & Holmesburg R. Co. Philadelphia  
John Wanamaker Philadelphia  
Floyd Wells Co. Royersford  
Susquehanna Silk Mills Sunbury  
L. H. Gillmer & Co. Tacony  
F. D. Beyer & Co. Tyrone  
Uniontown Hospital Uniontown

## SOUTH CAROLINA

Cotton Oil Co. Bamberg  
The Wateree Mills Co. Camden  
Va-Carolina Chemical Co. Charleston  
Gallivan Building Co. Columbia  
Addison Mills Edgefield  
Winnesboro Mills Winnesboro

## TENNESSEE

Harian-Morris Mfg. Co. Jackson  
Kaucher, Hodges & Co. Memphis  
Orgill Brothers Co. Memphis  
Patterson Transfer Co. Memphis  
Valley Cotton Oil Co. Memphis  
Memphis Motor Co. Memphis  
Memphis Terminal Corporation Memphis

## TEXAS

Overland Texas Company Amarillo  
J. W. Singleton Amarillo  
City of Aransas Pass Aransas Pass  
Brydson Brothers Austin  
H. C. Hellmuth Bellville  
H. T. Ponsford & Sons El Paso  
City of Hearne Hearne  
Municipal Warehouse Houston  
Lockhart Oil & Gin Co. Lockhart  
Landa Cotton Oil Co. New Braunfels  
M. P. Kelley Paris  
Paris Building & Supply Co. Paris  
Cameron Water Pwr. & Lt. Co. San Antonio  
Firestone Building San Antonio  
City & County Hospital San Antonio

## VIRGINIA

John H. Heald & Co. Bradford  
Riverside Cotton Mills Danville  
Cameron Cotton Mills Drakes Branch  
Norfolk Warehouse Corporation Norfolk  
British-American Tobacco Co. Richmond  
Kings & Co. Richmond  
Export-Leaf Tobacco Co. Richmond  
W. S. Ragland Richmond  
Va-Carolina Chemical Co. Richmond

## WEST VIRGINIA

Interwoven Mills Martinsburg  
Globe Automatic Sprinkler Co. Warwood  
Bell Telephone Co. Wheeling  
Central District Telephone Co. Wheeling

## WISCONSIN

Fond du Lac Church Fur Co. Fond du Lac

## WYOMING

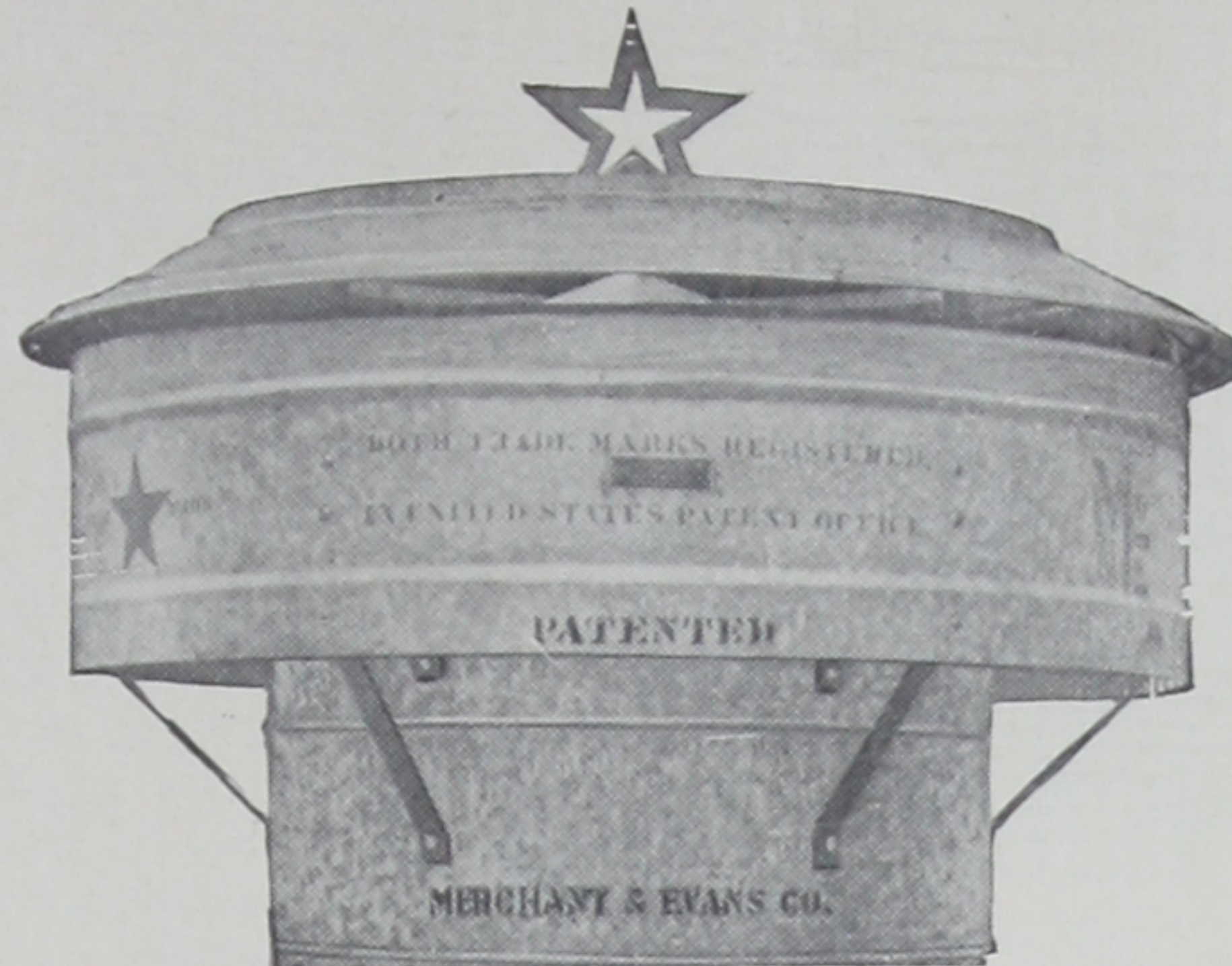
Sheridan Iron Works Sheridan

Insist on Evans "Almetl"—join this list of satisfied users.



# "Star" Ventilators

(Patented)



are extensively used on many of the most notable buildings in America, while the other Merchant & Evans Co. specialties, briefly described on the following pages—High Grade Roofing Plates, Metal Spanish Tiles, and Metal Gothic Shingles—are al-

most as well known.

The U. S. Government adopted the Star Ventilator as a War Standard on account of its simplicity of construction and high efficiency after thorough competitive tests.

## Partial List of very prominent users of "Star" Ventilators:

National Steel Car Co., Hamilton, Can.  
Berlin Construction Co., Berlin, Conn.  
American Brass Co., Torrington, Conn.  
E. I. DuPont de Nemours Powder Co., Wilmington, Del.  
Southern Railway Co., Washington, D. C.  
U. S. Government, practically all Departments.  
Armour & Co., Chicago, Ill.  
Chicago & Northwestern R. R. Co., Chicago.  
Cudahy Packing Co., Chicago, Ill.  
Fairbanks, Morse & Co., Chicago, Ill.  
Marshall Field & Co., Chicago, Ill.  
Gulf, Colorado & Santa Fe R. Co., Chicago.  
Texas Co., Chicago, Ill.  
Pere Marquette R. R. Co., Detroit, Mich.  
Buhl Sons & Co., Detroit, Mich.

Crane Co., St. Louis, Mo.  
Illinois Steel Co., Chicago, Ill.  
John A. Roebling's Sons Co., Trenton, N. J.  
Lackawanna Steel Co., Buffalo, N. Y.  
American Bridge Co., New York.  
British American Tobacco Co., New York.  
Lehigh Valley R. R. Co., New York.  
New Jersey Zinc Co., New York.  
Newport News Ship Building & Dry Dock Co., New York.  
New York Central R. R. Co., New York.  
Old Dominion Steamship Co., New York.  
Tidewater Oil Co., New York.  
American Locomotive Co., Schenectady, N. Y.  
General Electric Co., New York.  
Utica State Hospital, Utica, N. Y.  
La Belle Iron Works, Steubenville, Ohio.

American Car & Foundry Co., Berwick, Pa.  
Lehigh Coal & Navigation Co., Philadelphia.  
Pennsylvania R. R. Co., Philadelphia.  
Philadelphia & Reading R. R. Co., Phila.  
American Sheet & Tin Plate Co., Pittsburg.  
Carnegie Steel Co., Pittsburg, Pa.  
Delaware, Lackawanna & Western R. R. Co., Plymouth, Pa.  
Swarthmore College, Swarthmore, Pa.  
Hampton Normal & Agricultural Institute, Hampton, Va.  
Seaboard Air Line Co., Norfolk, Va.  
Virginia R. R. Co., Norfolk, Va.  
Imperial Tobacco Co., Richmond, Va.  
Virginia-Carolina Chemical Co., Richmond.  
Norfolk & Western R. R. Co., Roanoke, Va.  
Pittsburgh Screw & Bolt Co., Pittsburgh, Pa.

## WE CLAIM

"STAR" Ventilators will give MORE CUBIC FEET air exhaust capacity per DOLLAR INVESTED, under like conditions of service and of equal construction strength, THAN ANY OTHER MAKE OF VENTILATOR.

## THE REASONS

There are many reasons for "Star" dominance in the Ventilator field.

*First*—"Star" Ventilators give maximum exhaust—viz., more cubic feet air exhaust capacity per dollar invested than any other Ventilator. They keep the air in motion, exhausting and expelling impure air and circulating the fresh air which replaces it.

*Second*—There is no possibility of down draughts with the "Star."

*Third*—The "Star" is storm proof.

*Fourth*—The "Star" is more pleasing in design than any other ventilator.

*Fifth*—The "Star" is more durable.

*Sixth*—The "Star" Fire Retarding Ventilators contain within themselves dampers held open against gravity by a chain with a fusible link. In case of fire, dampers automatically close, cutting off the exhaust, hence are a recognized medium of safety in event of internal combustion, constituting in fact a series of safety valves. After the fire is extinguished the chain device permits the ventilators to be readily opened, thus clearing the building of smoke, gases, etc.

*Seventh*—The "Star" Fire Retarding Skylight Ventilator distributes light through a section made up of heavy wired glass.



Woolworth Building, New York  
"Star" Equipped

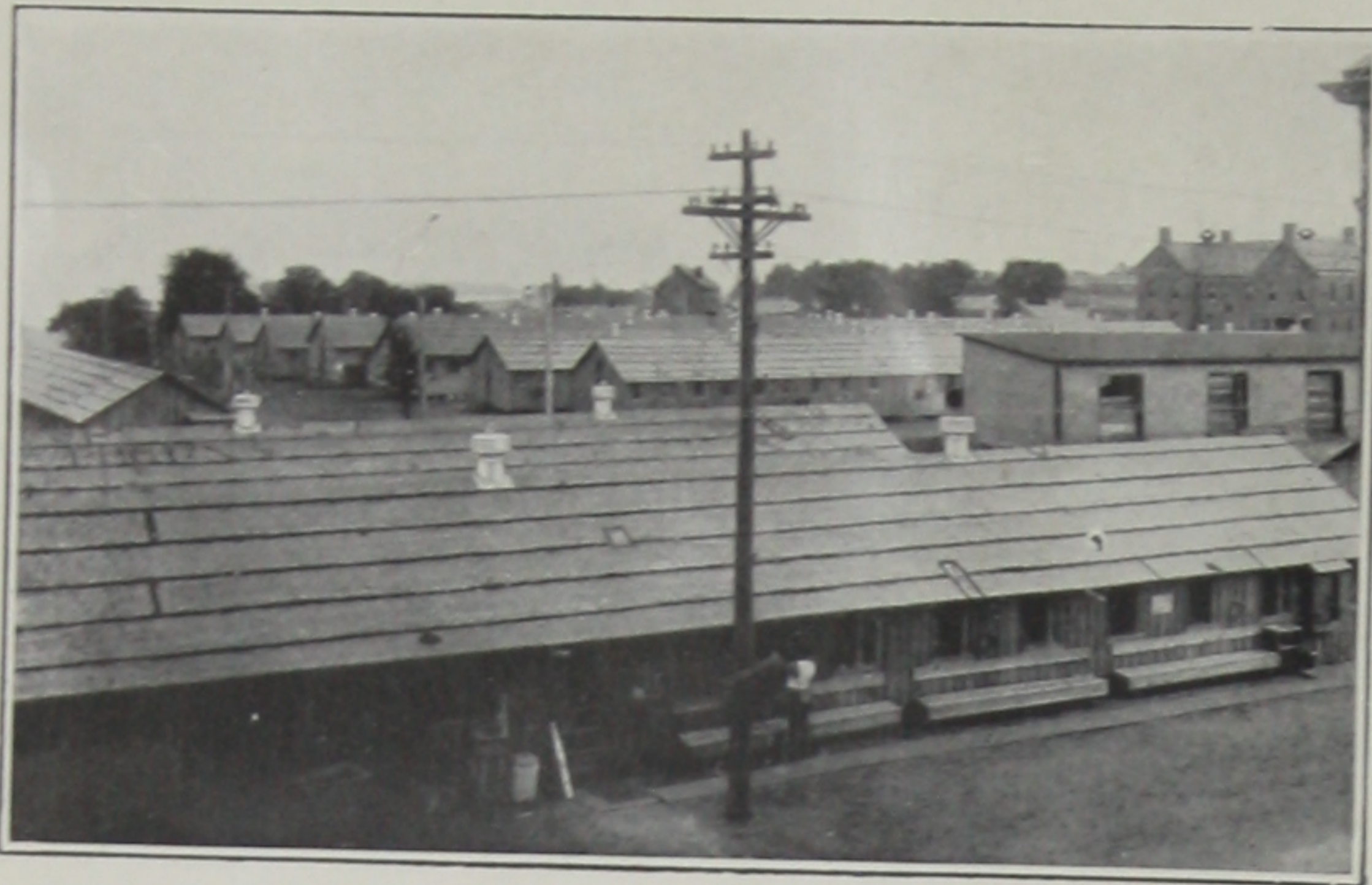


Municipal Building, New York  
"Star" Equipped





# Efficient Ventilation



PLATTSBURGH BARRACKS, N. Y.

Efficient ventilation is secured through the installation of a ventilator, the cost and maintenance charges of which are in direct proportion to the amount of exhaust obtainable.

The improved "Star" Ventilators have been designed with this basic principle in mind. They are therefore the simplest, most compact and most efficient ventilators in design, compared with cost, in the market—the cheapest investment in ventilation procurable in the country.

To other ventilators have been added complex and expensive improvements. They have been mounted on higher bases so as to give greater access to outer air currents, but the increase in exhaust power has not kept pace with the increase in cost.

By adhering strictly to the simplicity of our design and using a ventilator of larger size where an increased exhaust power is demanded, we are able to keep the cost per foot of exhaust at the minimum rate, which is lower than that of any ventilator of similar or more complex design, on the market.

Our facilities for the production and marketing of our improved "Star" Ventilators were never better. We are prepared to solve the most difficult problems of ventilation with the best designed ventilator on the market.

## WE CLAIM

**"STAR" Ventilators will give MORE CUBIC FEET air exhaust capacity per DOLLAR INVESTED, under like conditions of service and of equal construction strength, THAN ANY OTHER MAKE OF VENTILATOR.**

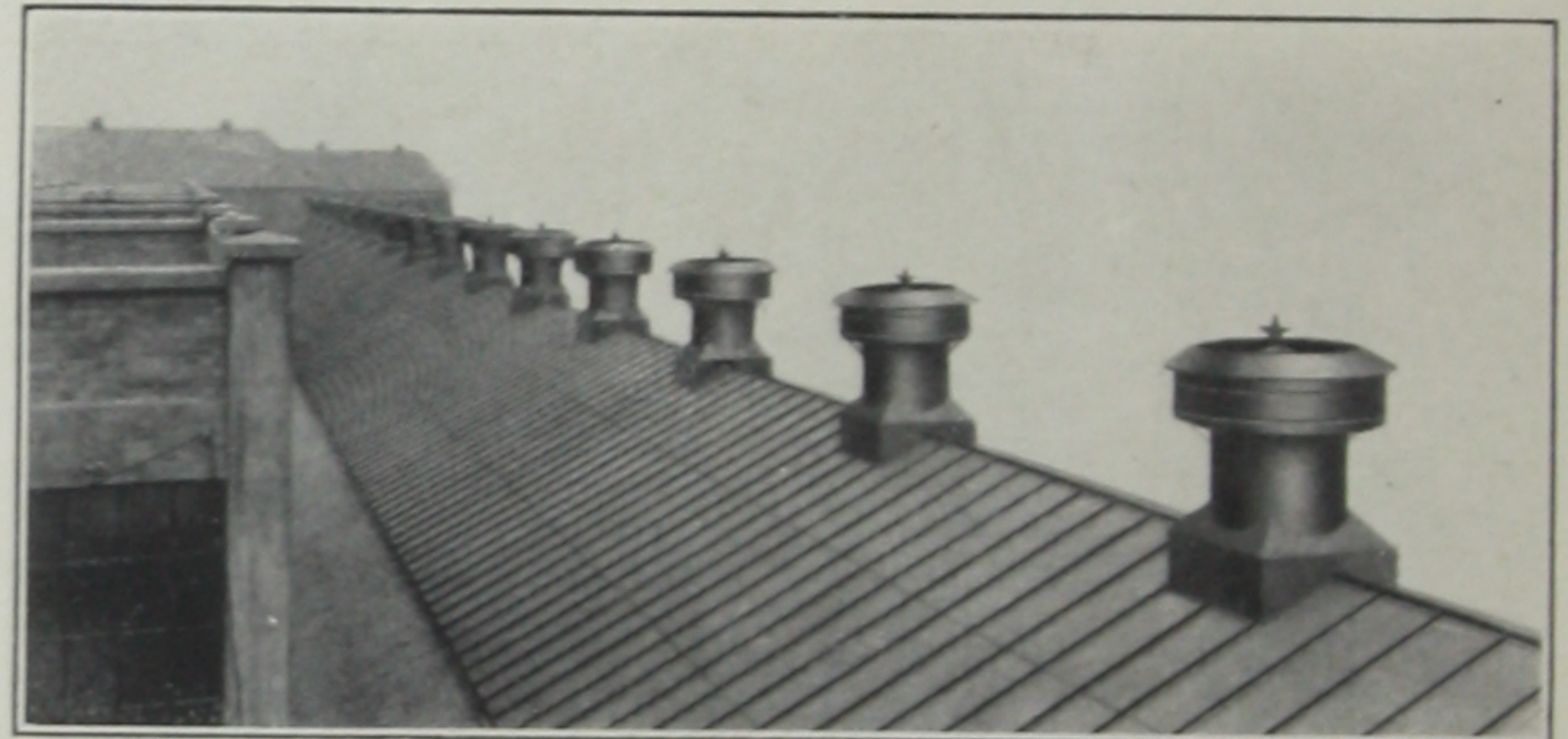
## Pointers on Good Ventilation

The purpose of ventilation is to exhaust vitiated or foul air from an enclosed area and admit fresh, pure air to replace it. "Star" Ventilators exhaust foul air without possibility of down draught.

Fuel is saved by such proper ventilation, and efficiency of the work force assured.

Modern ventilation practice is based on a minimum supply of 30 cubic feet of air per minute per person in area to be ventilated.

*NOTE.—Static ventilators (like these) should always be of largest diameter buyer can afford and install, because when air is still (as occurs most of the time) the larger the roof opening the better the ventilation. Always buy largest diameter vent of sound design procurable for same investment.*



"STAR" VENTILATORS ON PITTSBURGH SCREW AND BOLT CO. BUILDING, PITTSBURGH, PA.



"STAR" VENTILATORS ON THE U. S. WAR TRADE BOARD BUILDING, WASHINGTON, D. C.

The following schedule of air supply per hour per person is practical under ordinary conditions:

	Cu. Ft. per Hour
Hospitals .....	3600 per Bed
Legislative Assembly Halls ..	3600 " Seat
Barracks, Bedrooms and Work-shops .....	3600 " Person
Schools and Churches .....	2400 " "
Theatres and Ordinary Halls of Audience .....	2400 " Seat
Office Rooms .....	1800 " Person
Dining Rooms .....	1800 " "

Above does not apply to all cases, but is a good, practical working basis.





# TABLE OF SIZES

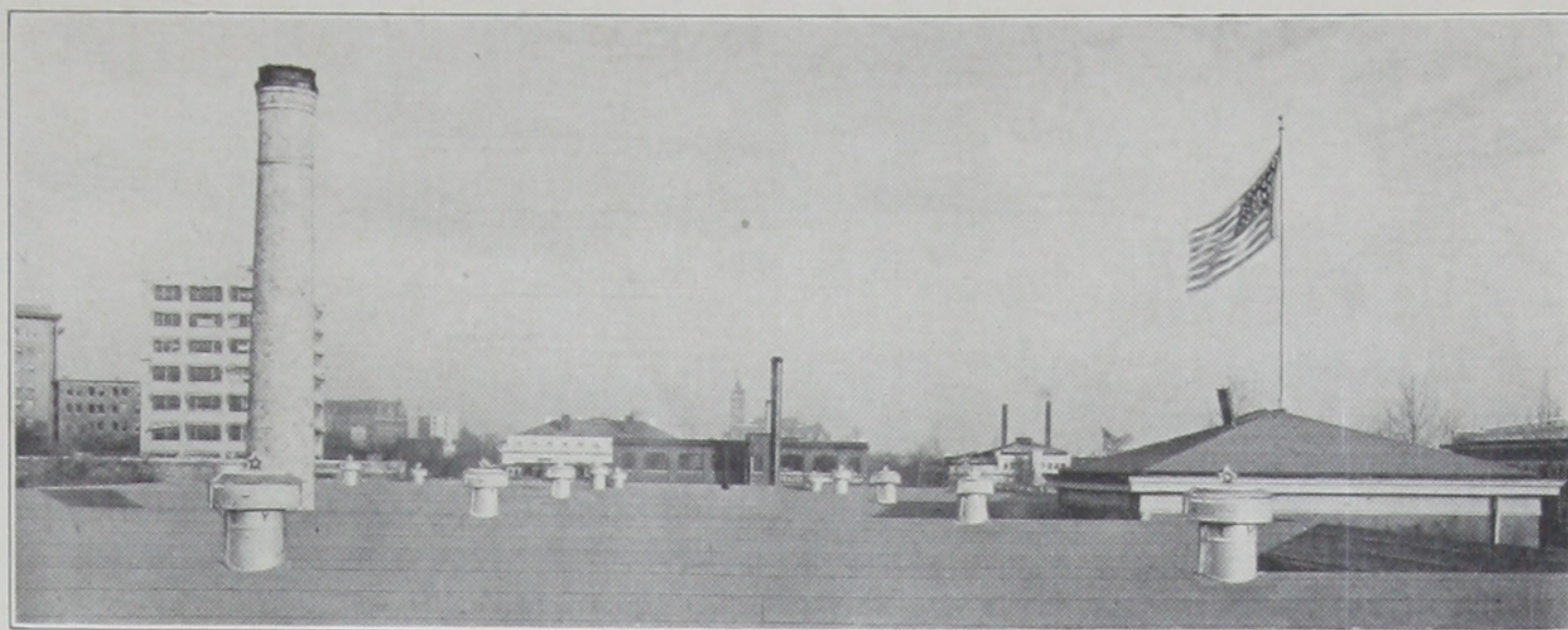
## Galvanized Standard

### "Star" Ventilators

Size	Gauge Steel	Net Wt. Pounds
3 inch	26	$\frac{5}{8}$
4 "	26	1
5 "	26	$1\frac{1}{2}$
6 "	26	$2\frac{1}{4}$
7 "	26	3
8 "	26	$4\frac{1}{2}$
9 "	26	5
10 "	26	$6\frac{3}{4}$
12 "	24	11
14 "	24	14
16 "	24	20
18 "	22	$27\frac{1}{2}$
20 "	22	34
22 "	22	36
24 "	22	44
28 "	20	69
30 "	20	84
36 "	20	117
40 "	20	145
42 "	20	150
48 "	20	200
54 "	18	288
60 "	18	355
72 "	18	570
84 "	18	828
96 "	18	924

Net prices sent upon application to any office of the Company.

Ventilators of stock sizes above or of special designs, made in Galvanized Steel, Copper or other metals specified by purchasers.



"Star" Ventilators on the U. S. Food Administration Bldg., Washington, D. C.

## Types of "Star" Ventilators

The four standard types of "Star" Ventilators are:

1. Standard "Star" Ventilator.
2. Fire Retarding "Star" Ventilator.
3. Skylight "Star" Ventilator.
4. Fire Retarding Skylight "Star" Ventilator.

These Ventilators are usually made from galvanized steel or iron, and from copper.

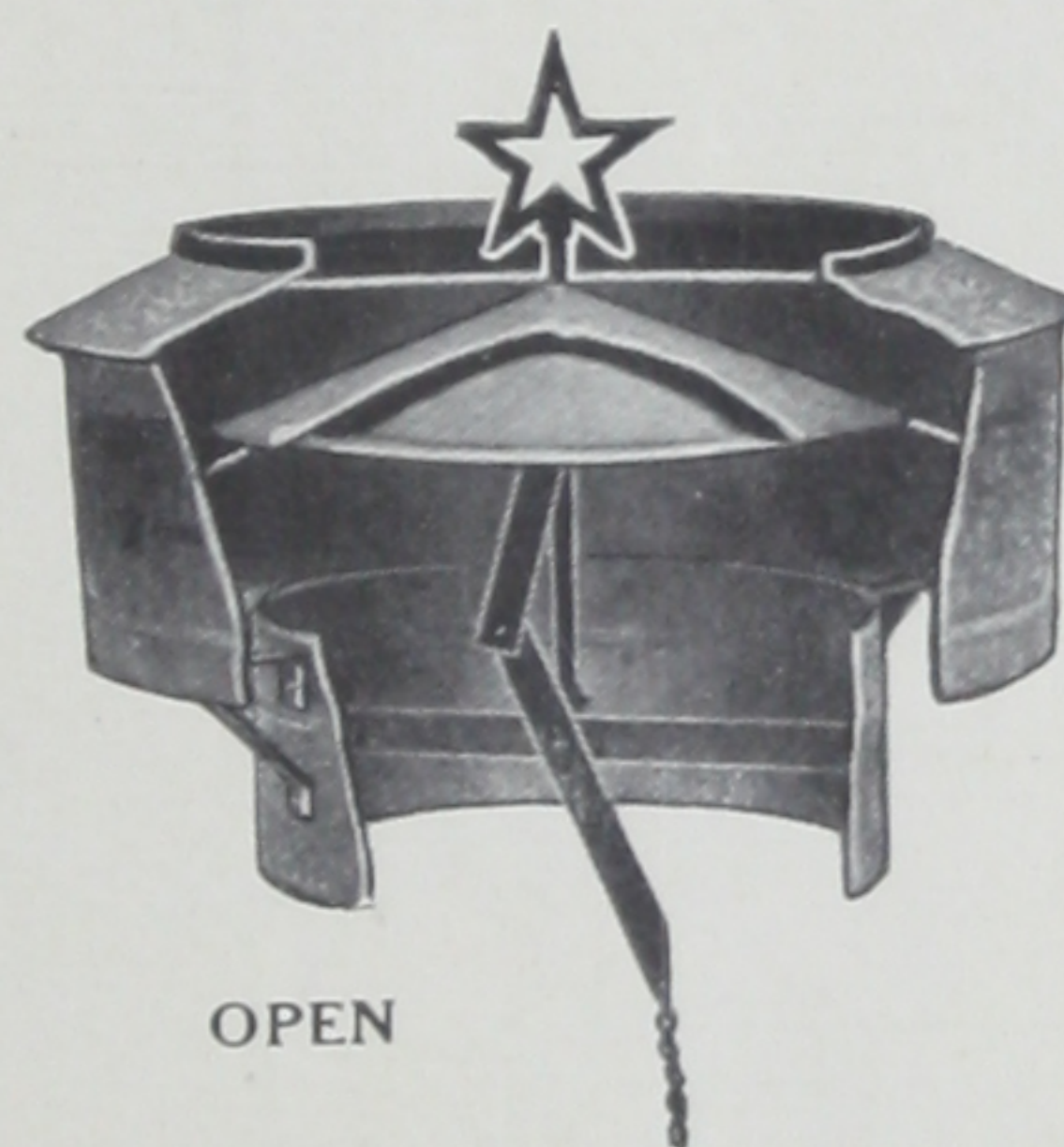
In connection with the Ventilator we can furnish the following:

1. Regulation bases for any roof—to fit chimneys, etc.
2. Special bases for peculiar conditions, of any design desired.
3. Flat disc dampers to fit any base, hand-controlled by chain through opening.

**Important.**—We strongly recommend that "Star" Ventilators be located at least 30 inches above ridge or slope of roof. Best results are obtained by locating Ventilator at highest possible point above the ridge.

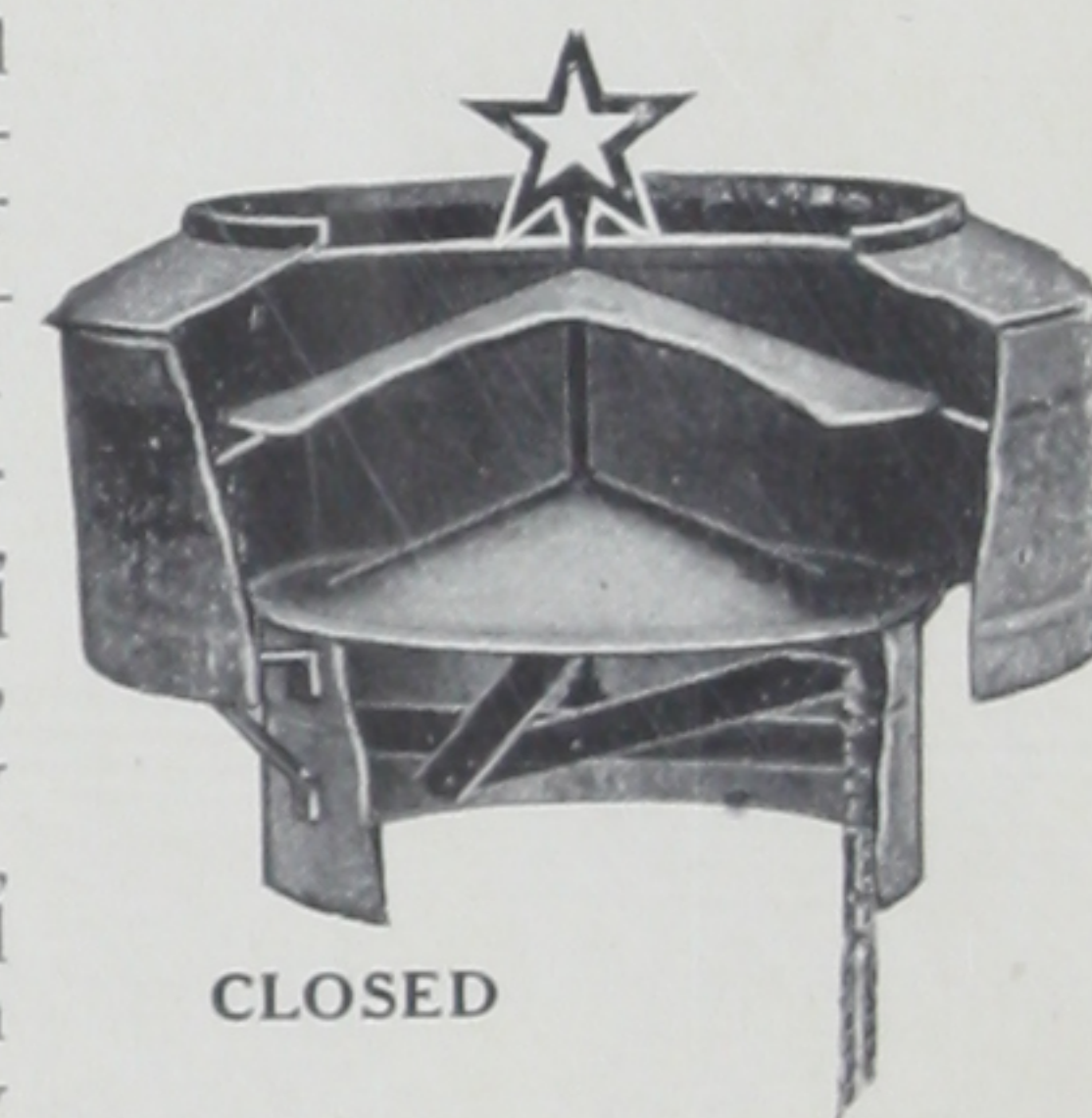
## Fire Retarding "Star" Ventilator

With Patented Gravity Damper



OPEN

The vertical slide Damper operates by lever movement, controlled by chain with fusible link. In case of fire, link parts and damper drops to closed position by force of gravity, cutting off all draft. Damper can be regulated by disengaging chain from control hook.



CLOSED

## Fire Retarding Skylight "Star" Ventilator

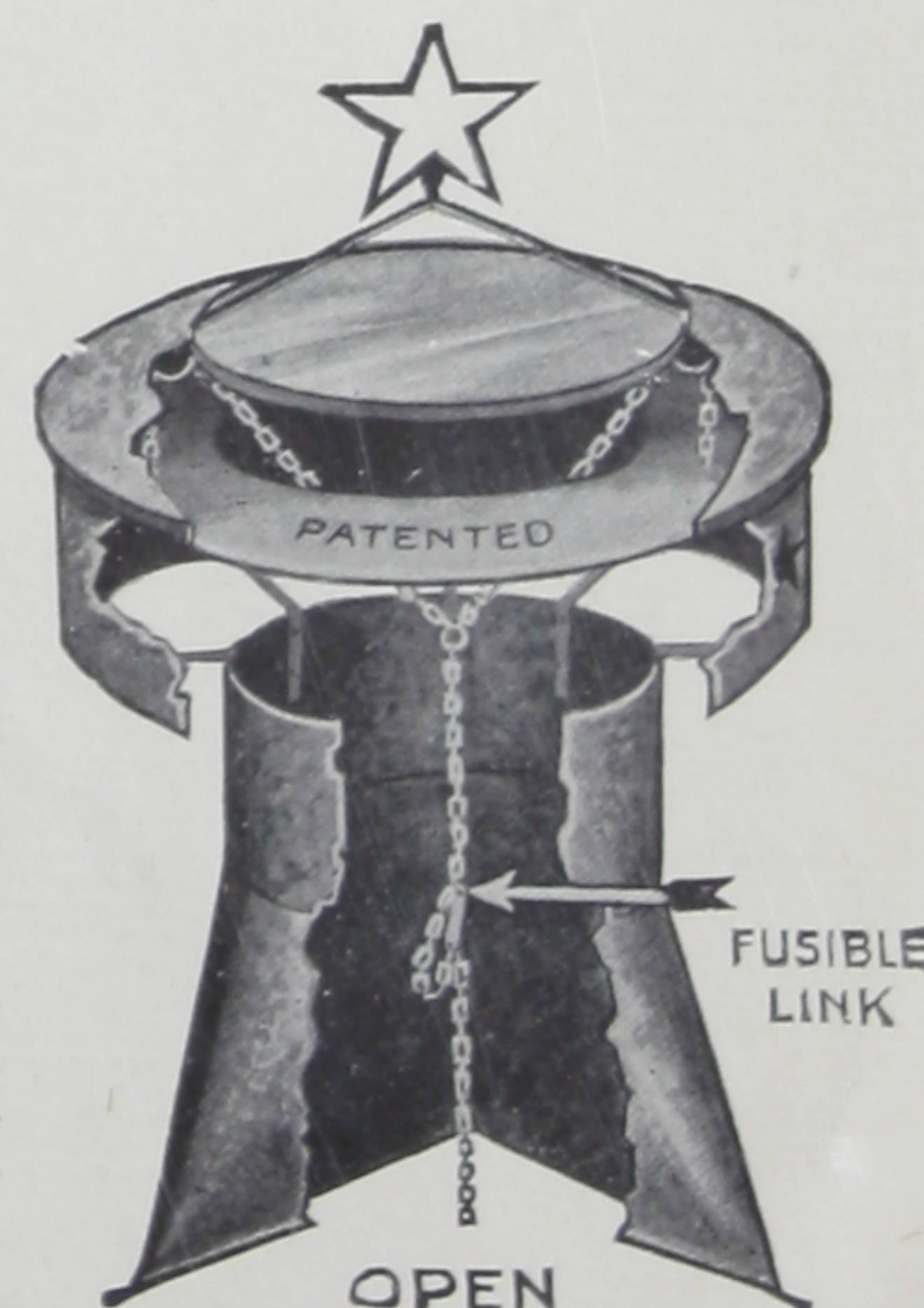
(Patented)

This device is recognized as a superior Skylight and Ventilator. It is absolutely weather proof with ample exhaust capacity.

This Skylight Model, provided with a movable Valve or Damper, is controlled by chain with a Fusible Link. In case of fire, the link parts and the Damper drops by gravity.

The movable Valve or Damper in this type can be changed, at will, from an open to a closed position, or vice versa.

**Notice.**—The above types of Ventilators and Dampers are protected in certain features by patents, and by our universally well-known, distinctive trade-mark, and by the "Star" appearing on top of the Ventilator.



OPEN



Standard "Star" Ventilator, with Base





# "Merchant's Old Method" ROOFING TIN

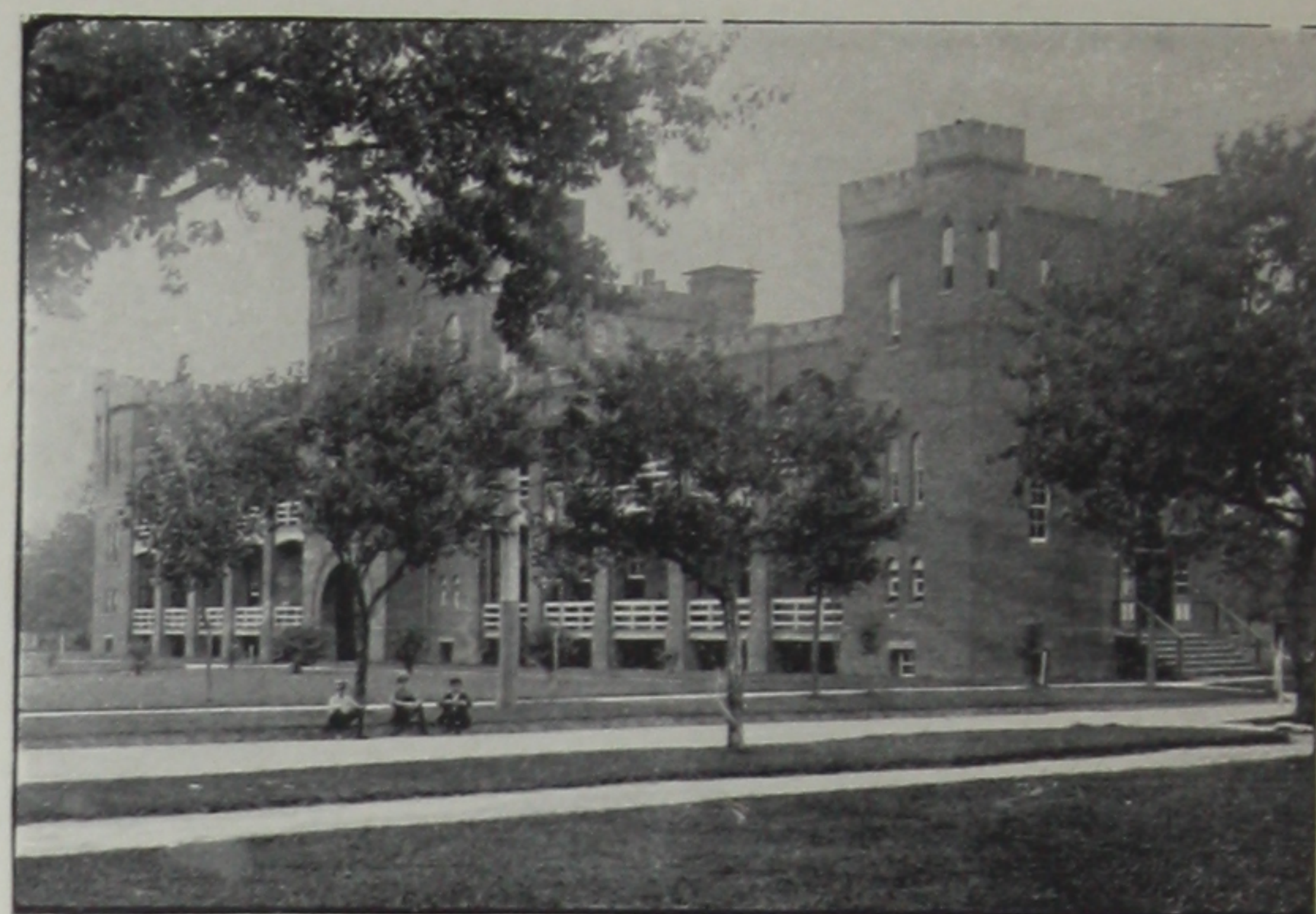
has been the accepted standard quality roofing plate for the last quarter of a century.

When properly applied, it makes a roof that is light, clean, sanitary and a thorough protection from fire, lightning and storm.

**Copper Bearing Base**  
**Very Heavy Coating** **Palm Oil Process**



STATE CAPITOL, RICHMOND, VA., COVERED WITH 10,000 SQ. FT. "MERCHANT'S OLD METHOD."



NATIONAL SOLDIERS' HOME (VA.), COVERED WITH 6,500 SQ. FT. "MERCHANT'S OLD METHOD."

As compared with Wooden Shingles and Composition or Slag and Gravel Roofing, Tin Roofs are superior for the following reasons:

**Fire Resisting**  
**Salvage**  
**Appearance**  
**Durable**  
**Adaptable**  
**Minimum Weight**  
**Flexible**

**Low First Cost**  
**Sanitary**  
**Weather Proof**  
**Lightning Proof**  
**Low Insurance**  
**Minimum Cost of Maintenance**

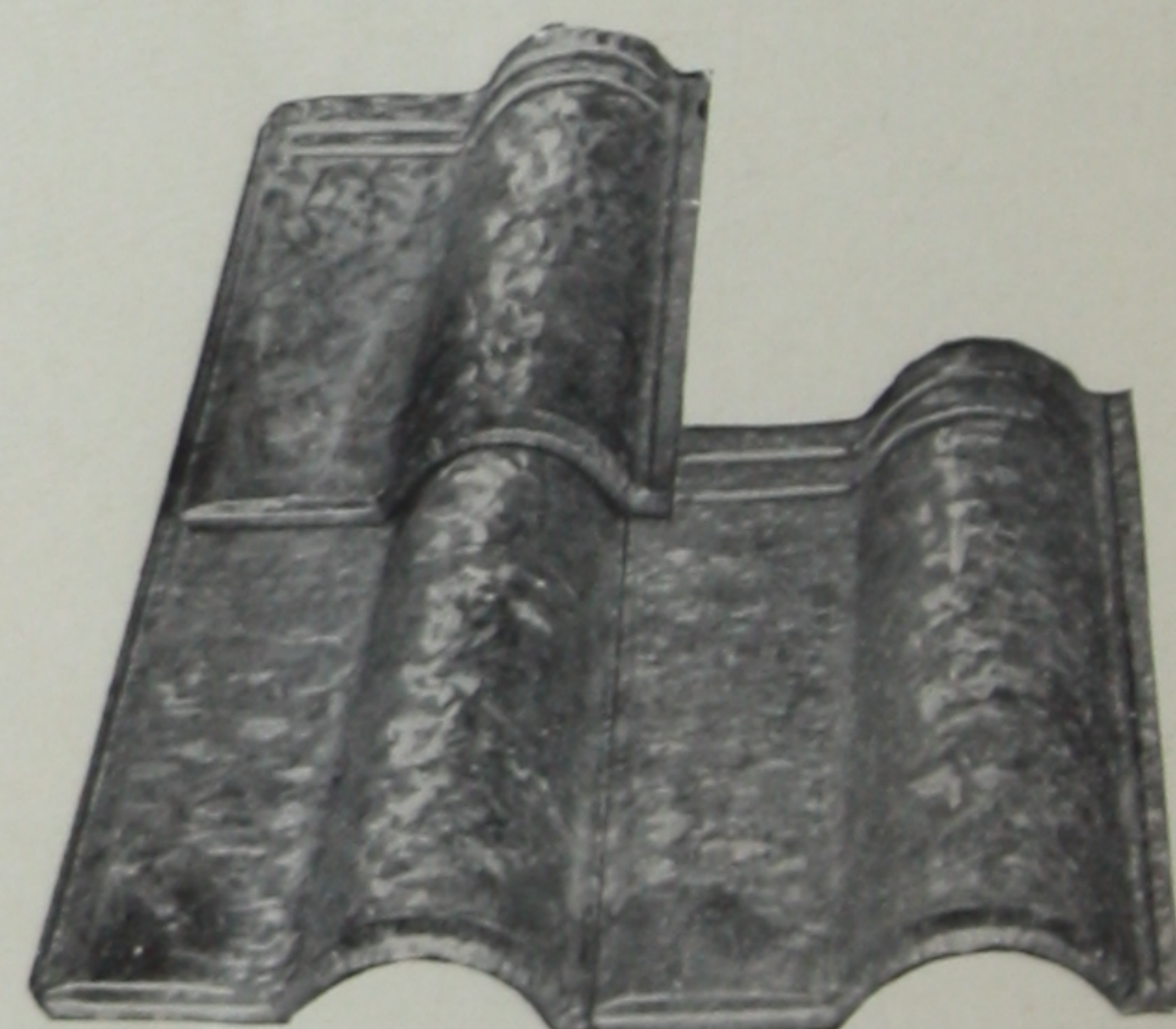
## Merchant's Metal Spanish Tiles

when properly applied, make a storm-proof, ornamental, fire-resisting roof. The fact that millions of square feet of these Tiles have been sold and that universal satisfaction has been given wherever they have been used is an indication of their merit and worth as roofing material.

### Merchant's "Gothic" Shingles



SHOWING APPLICATION OF "GOTHIC" SHINGLES.



SHOWING APPLICATION OF "SPANISH" TILES.

Offer full protection against fire and storm. They are especially designed for churches, residences and other buildings where a roof of moderate price and distinctive appearance is desired. They can be applied more readily than any other form of metal roofing.

We will gladly send samples and prices upon request.







# EVANS "ALMETL" FIRE DOORS & SHUTTERS

AND THE FAMOUS

## "STAR" VENTILATORS



POWELL EVANS, PRESIDENT.

# MERCHANT & EVANS Co

NEW YORK

BALTIMORE

ATLANTA

CLEVELAND



WHEELING

CHICAGO

ST. LOUIS

KANSAS CITY